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ENERGY AND WATER DEVELOPMENT
APPROPRIATIONS FOR 2002

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTH CONGRESS
FIRST SESSION

SUBCOMMITTEE ON ENERGY AND WATER DEVELOPMENT
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ENERGY AND WATER DEVELOPMENT APPROPRIATIONS FOR 2002

Wednesday, May 2, 2001.

DEPARTMENT OF ENERGY

WITNESS

HON. SPENCER ABRAHAM, SECRETARY OF ENERGY

Mr. Callahan. Good morning. Mr. Secretary, welcome to your first appearance in this capacity before an Appropriations subcommittee. Do not be nervous. This is my first time to be chairman before the Secretary of Energy as well, so it is our maiden voyage. I am sure that, come October, you will be satisfied, and we will be satisfied.

But we welcome you to the committee. I do not have an opening statement, but at this time, I will yield to my colleague, Mr. Visclosky, to see if he has an opening statement.

Mr. Visclosky. Mr. Chairman, just to welcome the Secretary as well.

Mr. Callahan. All right.

Mr. Secretary.

FISCAL YEAR 2002 BUDGET REQUEST

Secretary Abraham. Mr. Chairman, Representative Visclosky and to the other Members of the Subcommittee, thank you for having me here today. I look forward to this being just the first of obviously the many occasions when we get together to work on issues of importance to this country, and I am pleased to join you today to discuss the President's Fiscal Year 2002 budget.

Over the last few months, our Administration has prepared its first budget under an extraordinary and compressed time frame. We appreciate your patience and considerations. We have taken the opportunity to try to evaluate the policies to the extent time permits, and refine the missions of our Department. It is through this process that we have shaped this year's 2002 budget submission.

In doing so, we try to employ basically three strategies to try to guide us.

First, we attempted to identify Presidential policy priorities as they have been outlined during the President's campaign, and attempted to support them with appropriate levels of funding.

Examples include strengthening security at DOE laboratories, improving management of the weapons stockpile, preserving our nation's uranium enrichment capacity, moving forward on a permanent nuclear waste repository and similar items.

In addition, we selected areas where we believe that in-depth policy analysis is important and that the direction, progress, and level of commitment by the Federal Government needed to be reexamined. In those areas, we preserved core competencies pending the outcome of a variety of Administration reviews which are taking place at this time.

Pivotal for our Department are Vice President Cheney's review of national energy policy, which has been much reported on, and which will certainly drive future policies and budgets of the Department, Secretary Rumsfeld's defense and nuclear posture reviews, as well as the National Security Council's review of U.S. deterrence and non-proliferation programs.

Third, we evaluated all of our Department of Energy programs, then calibrated the Fiscal Year 2002 budget based on several principles that I outlined for our DOE program managers. These principles complement the President's blueprint. They are specific to the Department's mission and tailored to improve management.

Accordingly, our Department will: seek to enhance complex-wide safeguards and security efforts; eliminate programs that have completed their mission, are redundant, ineffective, or obsolete; establish baselines and improve accountability for project and capital asset management; arrest deterioration of infrastructure through stronger management of facility maintenance; utilize computer information systems to improve management and to promote efficient use of resources; and respect Congressional policy determinations for operating the complex.

Our budget request is $19.2 billion. This represents a 2.3 percent reduction, $456 million below the fiscal year 2001 appropriations level, but it is a $275 million increase over the fiscal year 2001 request which was submitted by the previous administration to Congress.

Moreover, if we subtract the cost of construction projects scheduled for completion, funds that were provided for the Cerro Grande fire emergency and one-time projects directed by Congress, this budget is exactly $13 million below this year's appropriation level. Put another way, the 2002 request is 8 percent or $1.4 billion above the Fiscal Year 2000 appropriation level.

The Energy and Water Development Subcommittee provides 92 percent of the Department of Energy's budget, as you know. For programs within your jurisdiction, we propose $17.6 billion in 2002 spending. This request is approximately $446 million less than the 2001 appropriations level, but it is level with the 2001 budget request that was submitted to Congress, and it is $1.1 million more than the fiscal year 2000 appropriation level.

I am going to speak briefly about some of these areas, but in the interest of going to questions, I may be--

Mr. Callahan. We will accept the statement for the record.

[The prepared statement of Secretary Abraham follows:]

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NATIONAL SECURITY BUDGET REQUEST

Secretary Abraham. If we could.

Obviously our program areas range from national security where we will be--where we propose $7.2 billion in fiscal year 2002, which is about $180 million more than the 2001 appropriations.

In this area, we put special focus on the protection of the DOE complex against physical and cyber intrusions, and our budget proposes a little over $1 billion, an increase of $101 million over last year, to address those issues.

Accordingly, program offices will directly manage safeguards and security implementation activities and resources in keeping with policies and directives issued through the Office of Security and Emergency Operations. Our National Nuclear Security Administration, under the direction of Under Secretary or Administrator John Gordon, we are proposing $6.8 billion for the 2002 budget. That is a $136 million increase over 2001. The lion's share of that budget will support weapons activities at our national laboratories and production sites. Our budget continues the refurbishment programs that are incorporated in that effort.

In addition to our weapons area, we also fund our naval reactors, and other national security activities, which we believe this budget addresses effectively.

ENERGY SUPPLY BUDGET REQUEST

In addition, of course, the future availability, reliability, and affordability of energy are the focus of national energy policy being developed at the present time under the leadership of Vice President Cheney. This budget emphasizes the next generation of energy production, including renewable sources and advanced nuclear technologies. It proposes to expand cost-share opportunities in areas of effective applied research through partnerships and industry collaboration.

RENEWABLE ENERGY

In the area of renewable energy, our $277 million amended request maintains biomass, hydrogen, hydro-power, high-temperature super-conducting energy storage, renewable energy production incentives, and transmission reliability programs at approximately current funding levels, and we will continue core research and development in other areas.

The budget also advances a diverse portfolio of new and emerging technologies that we think offer cleaner and increasingly affordable solutions to help meet our growing U.S. energy needs through industry partnerships.

NUCLEAR ENERGY

In addition and in light of our present energy situation, we must realize the potential of our nation's second largest source of electricity, nuclear power. Nuclear generation from our 103 power plants produced 20 percent of our nation's electricity output in the year 2000. Of the $223 million budget proposed for nuclear energy, science and technology supports innovations and encourages research participation by universities, industry and national laboratories.

Later we may refine how our nuclear energy resources are deployed along with our renewable energy investments based and the recommendations of the President's national energy plan.

SCIENCE

Our science programs I think are the finest in the world. The department's well known physical science and life science, mathematics, computation, engineering, and environmental research program serve as the basis for discoveries in almost every technical field. Our $3.2 billion request for DOE's basic research portfolio supports the President's goal of strengthening the U.S. scientific enterprise.

Substantial continued investment in the spallation neutron source will provide the next generation neutron scattering source project scheduled for completion in June of 2006. The budget supports essential collaboration at nanoscale science research centers, upgrades at Illinois' Fermi Lab, and improvements to Stanford's Linear Accelerator facilities.

In addition, the Human Genome Project, which began at DOE in 1986, is now entering a new phase. DOE is proposing the new Genomes to Life Initiative that will explore how genomes account for the functioning of cells. Our goal is to use this information in energy resources to examine the effect of energy use on humans, plants, and animals, and in radioactive waste clean-up.

ENVIRONMENTAL QUALITY BUDGET REQUEST

For fiscal year 2002, the budget proposes $6.5 billion for environmental quality programs to advance cleanup and closure of the department's legacy sites in 30 states, covering over two million acres.

As I think everybody is aware, progress in environmental management since the program was established in 1989 is impressive. As of the end of the year 2000, active cleanup at 71 sites had been finished, with another three expected this year. Two vitrification facilities are operating to convert highly radioactive waste into safer glass form. The Waste Isolation Pilot Plant the world's first deep geological repository, is accepting waste from sites across the DOE complex.

However, despite the progress that we have made, and I want to probably get back to this, I am sure, in questions, but I just wanted to indicate that after reviewing environmental management budget requirements for the next decade, I concluded that we should be moving more rapidly to complete the cleanup of remaining sites.

When I arrived at the department, I was told that we had a 70-year $300 billion environmental management plan. To me, that takes too long, and I am not sure if we need to spend that much money to get the job done if we could more directly focus on completion of projects.

As I think the committee knows, there are two major sites, Rocky Flats and Fernald, where we are moving towards a reasonably short time frame for completion, and I believe the kinds of processes that have been put in place to try to bring that about need to be examined on a complex-wide basis.

So what I have done in response to that concern and in response to the concerns we have seen in recent years, criticism about overhead and so on in these programs, is to direct the department to engage in a full top-to-bottom review of our environmental management programs.

I believe that we can complete this process in a fairly short period of time, and I think as a consequence of it that we can return and work with this committee and others who have an interest in these issues to try to bring about a more realistic completion of the programs we have across the complex.

Accordingly, what we are trying to do in this process is also involve people from throughout the country who work with and care about these programs, and to that extent, EPA Administrator Whitman and I are asking the governors of DOE sites to work with us to improve the compliance framework that governs the cleanup work at our sites. I believe these programs will help us in the future to more effectively address our environmental challenges within the DOE complex.

CIVILIAN RADIOACTIVE WASTE MANAGEMENT

In addition, our civilian radioactive waste management program budget is $445 million, which is $55 million more than our 2001 appropriation. It supports the President's commitment for in-depth scientific analysis that is required by the Nuclear Waste Policy Act before moving forward with respect to issues that pertain to the licensing of a geologic repository for high-level waste.

In conclusion, Mr. Chairman, obviously there are a lot of areas that I suspect we may get into, but we believe that this budget is the right budget at this time for our department. We are in a state of transition with respect to several policies that affect the department; we are also in the process of engaging in a number of reviews that will very directly affect energy policy, national security policy, and drive future budgets.

What we tried to do in this process was to support the programs of high priority, make sure programs that would be affected by these policy reviews remain in a situation where if the reviews suggest further activity in the future, we can move forward, but not move forward before we finish the policy analysis and the review of areas where serious issues have existed.

So at this point, I would be glad to discuss the proposals with the committee, and again, I appreciate not just the chance to be here today, but the participation that a number of members of the committee have already participated in or taken--or that has taken place with our office as we have come to this point, and I appreciate the chance to answer your questions at this time.

ESTABLISHING THE FISCAL YEAR 2002 BUDGET REQUEST

Mr. Callahan. Thank you, Mr. Secretary.

You say this is the right budget at the right time. Some in the Senate feel differently. They feel that you have asked for an insufficient amount of money to supply Energy's needs, and I understand have extracted some commitment in the Senate to increase.

If this is the right budget at the right time, do you intend to fight that increase?

Secretary Abraham. Well, obviously the appropriation process, as I remember it from my fairly recent participation in it on the other side of this table, is one that involves discussions and negotiations between the White House and Congress.

What we have tried to do here is to establish a budget, as I said, that serves appropriately as a transition point from where we were to the period after we complete these reviews. I think it remains to be seen. I would not want to speculate in terms of specific areas where there might be areas for negotiation. What we have tried to present is what we think, at least, is the right level of spending for the various program areas of the department for this year.

EMERGENCY FUNDING

Mr. Callahan. Well, far be it for me, if you come and ask for a 2 percent reduction, for me to fight that. I am a fiscally responsible member of this Congress, and I am for cutting back on the bureaucracy; but at the same time, no doubt, there are going to be issues that come up this year just as they came up last year.

You mentioned there is no room in this budget for any new starts. What if something in an emergency status comes up between now and October when we will pass this bill, and it becomes necessary for us to start funding some problem?

I know California is a classic example. We are not going to fund California with their energy problems, but at the same time, there are going to be things that come up between now and October that are going to require some emergency attention. The fact that we have almost zero flexibility with the budget you have presented could be problematic, but we will just have to face that. But I should hope that you would not be down at the White House with OMB on September the 30th saying, Callahan has given me too much. I imagine that Callahan is going to probably heed your request to give you a 2 percent reduction. But I am saying there are going to be some problem areas that individual members are going to have.

The administration has taken the attitude that any new start last year was unnecessary. I do not mean to say you have taken that attitude, but regardless of what the administrator or OMB thought, some new starts are absolutely necessary, and we will just have to face that as we get there.

Secretary Abraham. If you wanted me to comment, I am not sure when in previous years there have been any agency heads who have pled with members of Congress ``please do not make me spend anymore,'' but that may be--the way you are describing, it may be the role we are playing here today.

I think if emergencies develop, that is obviously something we cannot foresee today, but I know that a decision with respect to emergencies, supplementals and so on would be made at the Office of Management and Budget of the White House, so we would certainly----

STATUS OF TOP NOMINATIONS AT THE DEPARTMENT

Mr. Callahan. Well, it is a different role for me, too, Mr. Secretary. You know, I chaired Foreign Operations for the last six years, and I spent the entire six years trying to cut the President's request. Now I find myself in a position of being apprised by various agencies within your department, by various members of Congress, that there could be a possibility that we may have to increase spending, and to have me going down there getting a veto threat because I am increasing spending is a new role for me, and I do not think that I am going to put myself in that position with respect to Energy.

You now have your office open and running, but I noticed, like most agencies, there are other nominations in the top positions at the department. When do you anticipate you will have your full staff at least before the Senate?

Secretary Abraham. The status of our department is as follows. Of the various presidentially appointed and Senate-confirmed positions, we have eight individuals for those positions, for various positions that have already been designated, five of whom have been nominated who now await a hearing in the Senate. We have been working to try to get a hearing date for as many of those five as possible. I am hoping that in the next couple of weeks, that might take place.

We are working hard to identify some candidates for the remaining positions. The ones for which we already have either made nominations or identified are: the deputy secretary, the under secretary, four of the assistant secretaries and the CFO position as well as the general counsel position.

So at least most of the top spots--we still are looking for the right persons to nominate for the remaining two assistant secretary positions, but we are making pretty good progress in terms of locating people that we think will do a great job in this department. We are hoping that the nomination process can move speedily for those who already have gone to the Senate.

Mr. Callahan. I will have several questions--I do not want to take up all the time--regarding Yucca Mountain, regarding the new national energy policy that Vice President Cheney announced I think yesterday, but out of deference to my colleagues, I will now yield to Mr. Visclosky.

Mr. Visclosky. Mr. Chairman, if it is all right, I would yield to Mr. Edwards first.

Mr. Callahan. Mr. Edwards.

REDUCTION IN NONPROLIFERATION BUDGET REQUEST

Mr. Edwards. Thank you, Mr. Chairman.

Mr. Secretary, thank you for your public service in the U.S. Senate and continuing that public service at the Department of Energy as secretary.

We can make a lot of mistakes in this Congress in the next year without too many people being at risk, but in the area of proliferation of nuclear materials in the former Soviet Union, if we get that wrong, we risk thousands of our families' lives, if not literally millions.

I find it absolutely incredible that I pick up the Washington Post today and read about the President's commitment to a national missile defense system, which I support if we can find the technology that actually works, which we have not yet done, a system that will cost perhaps in the hundreds of billions of dollars, if we know what that cost might ultimately be. Yet you come before this committee and have to defend, I guess, a $100 million cut in the DOE non-proliferation budget.

Mr. Secretary, what that seems like to me is a family putting a $20,000 burglar alarm on their front door, and then, to save money, turning off the air-conditioning at night and raising their living room window and putting out a sign ``Burglars Welcome,'' except it is much more serious than that.

I have to have faith that the Department of Energy did not request this $100 million reduction, but nevertheless that is what came down at the end of the pike. Can you answer the question as to whether it was your agency or whether it was OMB that specifically cut the $100 million from the DOE non-proliferation budget?

Secretary Abraham. Well, in these discussions, a variety of budgets go back and forth and deliberations over components of it.

Let me just talk about the administration's commitment here. This administration is deeply committed to trying to protect the American people from national security threats, including those which relate to weapons of mass destruction. Whether or not it is because of the proliferation of either talent or weapons-grade materials from the former Soviet Union or anywhere else, what this budget reflects is an effort on our part to maintain the core competencies of the program where we felt very comfortable moving forward with them.

Well, we take part in an analysis that I referenced earlier that is being conducted on a fairly fast-track, I might add, by the National Security Council of the programs that are in place today.

As you know, some of the existing programs, which fall into approximately four categories, have been widely criticized as either ineffectual or as very difficult to analyze in terms of their effectiveness and accountability.

We believe that the programs which relate to the securitizing of sites, whether it has been naval reactor sites or former weapons complexes or current weapons complexes, is a program where we have made some great progress and we are for the most part keeping those programs on track.

There are some concerns about some of the other elements of the non-proliferation agenda, though, that I think warrant review, which is what is taking place.

Mr. Edwards. I do not mind, I will work with you on a bipartisan basis to find where programs are working well or not, but what you just said is we are in the middle of an analysis; yet, before that analysis is even finished, the administration is proposing a $100 million cut in the program to keep us, God forbid, from ever having to use a national missile defense system. It seems insane to me to try to save $100 million that might prevent some terrorist or rogue nation from getting his hands on nuclear-grade bomb material that could be used to threaten American citizens right here at home, and spend $100 billion perhaps on a missile defense system that might work ten years from now; I hope it will; who knows what it will cost. Again, we do not have the technology. But before you have even finished that analysis, you are recommending a cut in the proliferation budget.

I would feel more comfortable if you said you did not support that cut, OMB recommended it as a budget-cutting matter, and we can all work together to try to make tough choices to replace those cuts. But you are saying you support this $100 million non-proliferation budget cut?

UNITED STATES-RUSSIA PLUTONIUM DISPOSITION AGREEMENTS

Secretary Abraham. I support the decisions that have been made here.

Let me just point out for example one element of the non-proliferation agenda that is addressed in here. It is an area in which we have scaled back the program to some extent.

As you are aware, one of the elements in this program is the issue of trying to address the disposition of weapons-grade plutonium. The agreements that were reached were ones which, as I understand them, were called for both on the United States side as well as on the Russian Federation side for the demobilization of a certain level of plutonium, approximately, I think, 35 metric tons.

We have been able to move forward with very significant investments on our side in terms of the responsibilities under this non-proliferation component of the budget to begin to design the facilities to do this immobilization, the development of a MOX facility at the Savannah River site, these kinds of efforts. They are very costly. We project extremely significant long-term expenses with respect to the reduction of the weapons-grade plutonium on our side of the agenda.

As you probably know, the Russian side has not been able to so far come up with the resources to begin moving even in the direction----

Mr. Edwards. Which is why we need to help them, it seems to me.

Secretary Abraham. But our program is not to spend money to build their facilities; it is to build our own. And so what we decided to do in that area--I am not worried about--we have full security with respect to the weapons-grade plutonium in our complex. We are moving forward with one of those programs at full tilt, the MOX facility.

With respect to the demobilization or the immobilization facility at the Savannah River, we are going to slow up that process a little bit to determine what actions are going to be forthcoming on the other side, and we put on hold the third component, the disassembly program, which does not even have a Russian counterpart, as I understand it, because we are waiting to see whether or not, through a variety of participants, including the United States, we can put together sufficient resources so that the concern we have about the weapons-grade plutonium in the Russian Federation will be addressed.

If there are not resources--and these would be resources, as you know, provided by a number of countries, but if there are not going to be enough resources for them to proceed, we did not think it was a mistake for us to slow up on our side pending reanalysis of whether we should be spending all of our money to immobilize American weapons-grade plutonium if there was not going to be a corresponding action.

So some of the actions we have taken, while it reduces our total commitment in terms of spending, really has nothing to do with the other side of the equation, what is happening to weapons-grade materials in the former Soviet Union.

Mr. Edwards. I will look forward to continuing this line of discussion. Just from what I understand, this was an OMB-directed decision and if that is the case, it gives new meaning to the phrase ``penny wise and pound foolish.''

I look forward to having further discussions with you. Thank you, Mr. Chairman.

Secretary Abraham. And we do, too, and I think that once this review is completed, we will be able to work constructively together to accomplish the goal that I think we share.

Mr. Edwards. Thank you, Mr. Secretary.

Thank you, Mr. Chairman.

Mr. Callahan. Mr. Frelinghuysen.

NATIONAL ENERGY POLICY PLAN

Mr. Frelinghuysen. Thank you, Mr. Chairman.

Mr. Secretary, welcome.

First of all, I would like to commend the administration with coming up with a strategic energy plan. I was fairly hard on your predecessor because I basically said there did not seem to be any planning.

Of course, some have already sort of damned the proposal already. In reality, I am glad there is something out there for the Congress to debate.

I do think the administration, you, and the Vice President in setting up his study team, do need to outline the magnitude of the problem that is out there. You do not have to convince the people who live in California that there is a problem even though some say that that is sort of self-inflicted.

But I would urge you, as this plan is developed and you put meat on the bones, to provide more specifics on a regular basis to the public about what you and the White House are doing.

I think it needs to be said, even though some have read into the plan that we are sort of backing away from more investments in alternative energy sources and research, I do not see that occurring. I mean, certainly I wear fusion on my sleeve, but in reality, we are going to continue those types of investments in R&D.

Some have suggested we are turning our back on the environment. Certainly I hope that is not the case. I think you are here, I assume, to reinforce that is not the case. But what you are trying to reach, what I should hope, is a careful balance. Could you react to that?

Secretary Abraham. Sure. Well, first of all, we have not actually released the energy plan. I think there is----

Mr. Frelinghuysen. You would think you had.

Secretary Abraham. There have been some premature assumptions about it, and we are still--the one thing I would just stress is this is a plan in which the principals--that is, the agency and the department heads--are still working with a variety of topics that we will ultimately provide to the President recommendations on, and he will at that point decide from among those recommendations those he will choose to include in his plan.

I stressed in a speech I gave in March about where we needed to go, the need for balance with respect to a national energy plan, and that is a balance on a number of fronts, it is a balance between supply, and increases in conservation. It is a balance between environmental sensitivity and the need for increasing energy supplies, it is a balance between the sources of energy that we have.

I was struck when my own Department's Energy Information Administration presented us with information that suggested that over the course of the next 20 years, they estimated that almost the entire extent of our electricity demand increases would be met with natural gas-fired generation. That, as a result, translates into about a 63 percent increase in demand in this country for natural gas.

This is, to me, disconcerting because it suggests that there will not be any balance in terms of the sources of energy that we will be using in the next 20 years, and I am not sure that we can continue down that road.

So I think we need to be looking for new sources, I think we need to be balancing among the existing sources, recognizing that even anticipating some of the, you know, very significant increases in efficiency, the demand for energy is going to increase in the next 20 years very substantially in this country.

SPREAD OF ENERGY CRISIS TO THE NORTHEAST

Mr. Frelinghuysen. What has occurred in California for some of us in the East sort of serves as a wake-up call. I mean, there may be specific California issues in terms of how they dealt with deregulation, but you have been quoted as saying, I believe, blackouts in California are inevitable this summer. We are concerned about their crisis, but I am concerned about what may be happening in the Northeast.

Could you sort of briefly describe what the department has done to address this crisis, and whether there is a likelihood of that crisis spreading across the nation?

Secretary Abraham. Well, there is inevitably going to be a challenge for any region of the country where demand is increasing at a level that supply is not meeting. California's problems for the summer as we look ahead is that we right now project approximately a 5,000 megawatt difference between the level of demand when we get to the peak part of the summer and the current likely level of supply that will be available. That is why we have said that rolling blackouts seem inevitable.

The problem, obviously, is that it takes a while for supply to be increased. We have been working very closely with Governor Davis with respect to helping do whatever we can to----

Mr. Frelinghuysen. What about national preparedness? In other words, California is one thing----

Secretary Abraham. There is a variety of----

Mr. Frelinghuysen. How engaged is the Department of Energy working with emergency management people around the nation?

Secretary Abraham. Well, just yesterday, we announced an internal emergency operation organization which will be headed by General McBroom, who heads up our emergency planning at the department, to be a special sort of strike force for this summer. We also are working with others and will be available to work with other federal agencies that might come into play, FEMA and others, if there were to be emergencies as a result of blackouts or other energy disruptions.

The Northeast, some of the other areas of the country, do not have the challenge that California faces in terms of this shortage of supply, although we have certain areas that are close to the margin, if you would, that have been identified by the various councils, regional energy councils that analyze these peak levels and try to project what supply levels will be.

In the Northeast, according to reports I saw even today, for the most part we can meet the demand, or the regions can, although there are certain areas--New York City, for example, where I recently met with the state ISO, and they are very close to the margin there.

Part of the problem which they have in New York City is that because--and this is a broader problem we have as a country, is that our transmission grid is not necessarily adequate to move electricity when we need to to areas where there are shortages, and the City of New York confronts the fact that it has very limited capability of importing electricity from outside of the city, which means that as demand goes up, the only way to meet it is with supply that is generated inside the burroughs.

I have met with officials from New York on this. They think they are getting enough supply on line by the summer to be able to address this, but that is an area where we face challenges.

Mr. Frelinghuysen. Thank you.

Mr. Callahan. Mr. Visclosky.

REDUCTION IN NONPROLIFERATION BUDGET REQUEST

Mr. Visclosky. Thank you, Mr. Chairman.

Mr. Secretary, I would like to follow up on Mr. Edwards' line of questioning. We had a brief discussion yesterday as far as Russian programs, and first of all I would not disagree with you that changes need to be made. We talked about a number of programs yesterday, and also for the record would point out that you asked in your budget for an increase to $63 million for the fabrication facility for MOX fuel.

Secretary Abraham. Right.

Mr. Visclosky. And that is a significant increase over enacted levels, which for this year is $26 million.

So I would want to be very clear that changes need to be made and I would not disagree with that; I would, however, reference testimony by CIA Director George Tenet recently where he said that we have made considerable progress on terrorism against U.S. interests and facilities, but it persists. He went on to say that Russian state-run defense and nuclear industries are still strapped for funds. Moscow looks for them to acquire badly needed foreign exchange through exports. Russia remains a key supplier for a variety of civilian Iranian nuclear programs which could be used to advance its weapons programs as well. And then Director Tenet went on to talk about chemical and biological warfare agents and their production.

I would also point out that in your comments earlier, you did talk about prioritization of some elements of the Russian program, including the securing of sites, and you specifically referenced the Navy.

Some of the elements that I do find troubling as far as elimination from the budget, whoever's decisions they were, is that it is my understanding that $34 million were taken out of our proliferation detection and deterrence technology development program; $31 million for upgrades at 30 Russian Navy nuclear warhead sites containing approximately 1,500 warheads and conversion of about a megaton of vulnerable highly enriched uranium into a less deadly form was taken out; $12 million for development of chemical and biological agent detectors; $5 million for nuclear explosion monitoring; a 25 percent reduction of allowed 24 special monitoring visits to four Russian facilities; and reduced scope of detailed data analysis to assess Russian compliance with U.S. non-proliferation goals.

I don't expect you, because of the very detailed and precise elements of it, to comment specifically on those, but would want for the record to suggest I do think that as we proceed with this process and there is a restructuring of some of these Russian programs, I think some of these programs ought to have a second look.

Secretary Abraham. Well, and that is part of the process. You know, as I said earlier, some of the changes we made have been in direct relationship to or have been related to expenditures on the U.S. side of the equation.

As I mentioned with respect to Savannah River, we--and you mentioned we've increased funding, actually, for one of the processes there, the MOX facility. We slowed expenditures by a few million dollars with respect to the pit disassembly process and have put on hold the immobilization facility because that is connected to the--that is actually not even connected to a similar program on the other side.

RUSSIAN NAVAL REACTORS PROGRAM

But with regard to these other areas, I just would mention on the Naval reactors, as I think I alluded to earlier and you just referenced, we were asked after we began moving down the road by the Russian Federation to provide assistance with Naval reactors of the sort that we had been providing at various weapons sites.

My understanding is that of approximately 42 sites that are involved with regard to the Russian Naval reactors program, that we have completed activities at 17, we have moved to the identification--sort of the planning stage at 20 more. We are on track to move those forward. There are only five that have not yet, I guess, received any attention, but that is contemplated. But we look forward to continuing to work with you on these other components of the program.

Again, I want to stress, the concerns that have been expressed here are not unshared by me or by the Administration. The question was, should we--many of these programs were launched some time ago at a point when the Russian Federation was moving at the end of the Cold War into a new era. Things are changing inside of Russia that provide them perhaps a better ability to work on some of these programs than was the case when they began, but new issues have arisen, and we are trying to analyze those.

You mentioned the issue with respect to Russia's activities with respect to other nations, with respect to providing technology for nuclear reactors. That is an issue that I think should be part of this process, because clearly, while we want to secure materials inside Russia working together with them, we also have some concerns about those types of relationships that might be developing between Russia and Iran or others, and I have conveyed that concern to Russian counterparts and others in our Government have, both during this administration and I know in the previous one.

LABORATORY DIRECTED RESEARCH AND DEVELOPMENT

Mr. Visclosky. Okay.

Mr. Secretary, if I could turn to laboratory directed research and development projects, it is my understanding that DOE laboratories divert 6 percent of funds for research done in those laboratories for DOE-funded research. Am I correct on that?

Secretary Abraham. It is my understanding that the laboratories--that the lab-directed research are programs where the labs themselves are able to essentially assign 6 percent of the costs or of the payments they receive for programs that they conduct on behalf of our agency and others.

Mr. Visclosky. And other agencies.

Secretary Abraham. Right. To what in effect are projects they have identified as ones they wish to work on; in other words, ones that are not--either work for other programs with other departments of the Federal Government or with DOE.

Mr. Visclosky. And if I could ask, it would also be my understanding that the diversion of funds--say they are doing research for DOD on Project A, that the diversion of those 6 percent could actually be spent on anything completely unrelated to Project A at the direction of the lab director.

Secretary Abraham. That is my understanding, although there is program oversight that occurs between the labs and the regional offices of the department. Obviously the labs are contract operations; you know, the University of California operates two of the national labs, Lockheed operates another one. So our field offices obviously are monitoring this, and there are reports that are forthcoming of what that research is used for, as I understand it.

Mr. Visclosky. Are there any controls, if you would, imposed by your office prior to obligation of these monies at these labs?

Secretary Abraham. You know, I am not aware of any direct controls, but I know that there is a system by which the selections are monitored. I would have to investigate whether the department has ever exercised any prior intervention either to stop or modify such research.

Mr. Visclosky. Okay.

Secretary Abraham. My understanding is that typically it has been a 6 percent share. I think in the fiscal year 2000 budget, it may have been reduced to 4 percent, and then in the current year's budget, that percentage was restored to 6 percent.

Ballistic Missile Defense Organization

Mr. Visclosky. One last question on this line, and then I will suspend, Mr. Chairman.

I understand that DOE is also doing research for the ballistic missile defense organization of DOD, and I am wondering if you could for the record tell us how many dollars of those that have been spent on missile defense that is very important to the administration have been diverted under the laboratory directed research and development programs.

Secretary Abraham. I would be glad to take that for the record and try to supply the committee with the information.

Mr. Visclosky. Besides the dollar amount, as to what those activities might have been and whether they had any relationship at all to missile defense.

Secretary Abraham. Okay.

[The information follows:]

LDRD and Ballistic Missile Defense Organization Funds

Laboratory Directed Research and Development (LDRD) at DOE national defense laboratories each year is funded by an assessment, not to exceed 6 percent, of the laboratory's total operating and capital equipment budget, including non-DOE funded work at each laboratory. The assessment for LDRD was limited by the Energy and Water Development Appropriations Act for FY 2000 to 4 percent but restored to 6 percent for FY 2001. The LDRD assessment at Lawrence Livermore, Los Alamos and Sandia National Laboratories is part of the laboratory's overhead charge made against all work performed at each laboratory, both work for DOE and for non-DOE work for others. The sponsors of non-DOE funded work, including other federal agencies, are made aware of the LDRD assessment when entering into agreements with the laboratories.

Departmental records show that Ballistic Missile Defense Organization (BMDO) funds provided to the three defense laboratories in FY 2000 through the Work-For-Others Program totaled $1.4 million and in FY 2001 is estimated at $5.5 million. The total assessment for LDRD made by the three laboratories against BMDO provided funds for Work-For-Other projects is estimated at $56,000 for FY 2000 and $330,000 for FY 2001.

Individual LDRD projects are funded out of the total LDRD budget. There is no correlation between any specific LDRD project and the assessment made against any DOE project or any non-DOE project. The National Nuclear Security Administration noted in its latest annual report to Congress, that over 55 percent of LDRD projects at the three defense laboratories were considered to support Department of Defense missions.

Mr. Visclosky. Thank you.

And Mr. Chairman, thank you for your generosity on time.

Mr. Callahan. Mr. Wamp.

INVESTMENT IN THE SCIENCE PROGRAM

Mr. Wamp. Thank you, Mr. Chairman.

Mr. Secretary, I commend you on your courage to take over what has been an embattled agency and pledge our support to work with you to try to make the Department of Energy more efficient.

Three of your primary missions that are important to the free world are also very important to the part of the country that I come from: science and research, national security, and environmental management. Actually, the President's budget request on two of those three areas is quite favorable, with the NNSA, the advent of the NNSA, the national security piece, seems to be improving. We will have that discussion later in the week.

But setting that aside, recognizing that there seems to be sufficient and adequate funding in the national security missions, let me come back to science just for a minute and say that I particularly appreciate the President's commitment to basic research through the national laboratory system. You talked about the Spallation Neutron Source, and that is a partnership, a consortium between five different laboratories across the country. It happens to be sited in my district, and it is under construction.

It is a critical physical science research investment on behalf of the entire country, but I would like to also point out that when people think about science in the country, most of them think about the National Science Foundation or maybe even the National Institutes of Health, which is now a very popular way to invest in basic research.

Those are life and health sciences, and the Department of Energy Office of Science is also a very important agency for science and basic research investment typically along the physical science area.

We are having a forum here the day after Memorial Day on May the 29th in Washington to talk about the future of scientific investment, because in the post-Cold War era, we really haven't established national priorities on the need to fund the physical science investment, not just the life science investment. We are dramatically ramping up investment in health-related research in this country, and rightly so. But you cannot leave behind the physical sciences.

I would like for you to talk for a minute about the basic research through the Office of Science at the Department of Energy, where are we going, and give me your response to the need for a national discussion around the parity, really, between the physical science investment and the life science investment so they do not get out of whack because the two are interrelated, Mr. Secretary.

Secretary Abraham. Well, thank you, Congressman.

I would just say this. You know, as a member of the Senate, I was one of a group of people who at a very early stage joined together--I was one of the, I think, the original--one of the original cosponsors of legislation designed to try to double the budget of the National Institutes for Health over a fixed period of time, and I am proud of that effort.

I have to say that, like I think a number of other members of Congress who were approached by folks and who had the opportunity at an early stage to become familiar with some of the needs at NIH and some of the opportunities, that we sort of have put a lot of Federal Government focus and Congressional focus on that initiative, and I think it is a good one and I would not want to detract from that commitment.

But we have not put as much focus on the work done in some of our other science investment areas, especially at DOE where I think, frankly, a lot of people are not even aware of the magnitude of the kind of work we do.

I met with our lab directors for the first time a couple of weeks ago when they were in Washington and talked to them about the need for us to expand public awareness and Congressional awareness.

There is a little bit of a difference obviously because when we are in the areas of health, we have--virtually all of our constituents either themselves or have a family member with some ailment that NIH work can potentially help to address. There is not quite as clear a connection between some of the work we do in our labs in the basic sciences and physics and so on, that does not have quite the same kind of grassroots support.

I hope we could ramp that up. I think whether it is the

Human Genome Project, which is finally drawing some attention to the breakthrough work that we have done that began in these labs, or it is some of the super-computer work that will and is already being done, that maybe we can begin to capture the imagination of both the members of Congress as well as the American people. I think that has to happen for there to be the same level of momentum to increase these budgets as there has been in NIH.

But I assured our lab directors that I was, having gone through the experience on the NIH side, quite interested in helping to build that awareness and educate Americans about what we can do in other areas as well, and I would hope we could work together to accomplish that.

INFRASTRUCTURE

Mr. Wamp. Issues like nano-technology and protein development now clearly are connections between the physical sciences and life sciences arena, and I hope that we can focus through the Department of Energy on the enhancement of that as well.

One other question, and then I will hold my others until we come back around.

The Department of Energy inherited from the Atomic Energy Commission most of the facilities across the country after the weapons build-up 50-plus years ago. The infrastructure clearly is aging and eroding, and you have some major challenges--we do, the country--to reinvest and rebuild the infrastructure of the weapons facilities and even our national laboratory system. Some of our facilities are 50 years old.

How are we going to plan three, four, five years in advance, from your perspective, for the needs to modernize the facilities across the country at the labs and at the weapons facilities?

Secretary Abraham. Well, the question of facility conditions is one of the priority issues which General Gordon, who heads the NNSA, has brought to my attention in the first couple of months of our Administration.

As everybody here knows, about a year ago, I guess, we and the Congress worked together to put together the various defense programs and national security programs of the DOE under one roof, NNSA. General Gordon was confirmed last summer. He began the process that the Congress had asked him to do, which was to try to evaluate both on the substantive side as well as on the infrastructure side the kinds of needs that we confronted and had moved a fair distance down the road of that analysis when the election occurred, after which, when the new Administration came, we launched a variety, as I mentioned already, of reviews that are defense-related.

What we are trying to do is essentially marry the infrastructure and other reviews that have already begun at the Department with the strategies that are going to emanate from these defense reviews that Secretary Rumsfeld is engaged in. So that if we are going to move forward in terms of infrastructure and complex changes, they will be consistent with the needs that we foresee in the years ahead. That is kind of where we are at this point.

This is a fairly fast-moving review at DOD. We have been working with them, both in terms of the substantive reviews, but also in terms of trying to incorporate these considerations which relate to infrastructure. So I expect that we will have some proposals along those lines to offer in the near future.

ENVIRONMENTAL CLEANUP

Mr. Wamp. Just to follow up, since you mention the Rumsfeld review on defense, your review on environmental management and the past and the present and the future is very similar to the Rumsfeld approach to defense and the Pentagon saying, we are not doing a good enough job. We are going to stop, we are going to plan, we are going to look at the overall picture.

If you could just address the environmental needs, because obviously, from a lot of perspectives, your budget request is not sufficient for environmental cleanup, but you believe that we can do a much better job and that we need to stop and make better plans for the future in order to save money over the next ten years.

Secretary Abraham. I have talked with a number of folks on this committee and in the Senate as well about--and I alluded to it earlier--the sort of outline I received when I took this job with respect to environmental management and which I was told that, with the exception of two--let me step back.

Over a period of some 50 years, we obviously engaged in a lot of defense-related programs at labs, at manufacturing sites and so on across the country. About 113 were subsequently identified in the late 1980s as in need of environmental remediation of some sort or another, and about 71 have been already fully addressed. But those were the 71--and there will be three more this year--but they tend to be ones that were fairly easy to address, and not as expensive.

Now we come to the more serious challenges. The plan that I was provided said that the goal was to get the remaining sites cleaned up over a 70-year period of time. This came against a backdrop that I think a lot of the members of this committee are familiar with and which I remember from being in the Senate of concerns about whether or not we are spending enough of the money we do spend on actual cleanup versus other sorts of things at the sites, and by that, I mean, overhead and maintenance and securing things and so on.

Part of the problem is that when you put in place a 70-year time frame, you have an awful lot of expense that is going to be involved in just keeping things in place, protecting people from somehow getting too close to a contaminated area. I mean, there are a lot of these kinds of expenses that go on if your plan is 70 years in duration.

My reaction was 70 years--are you kidding? That means that people who are living in these sites' grandchildren may, in fact, be the first to enjoy living in these communities with a truly cleaned-up and environmentally remediated site. It seems too long to me. The cost of $300 billion seemed like a lot, but I would be willing to expend that if that is what it takes, but the question is, do you really think we should stretch it out over this period of time?

CLEAN UP AT ROCKY FLATS

Let me give you a comparison, and certainly you cannot apply every single example to every other site, but at Rocky Flats, we encountered in 1994 an assessment that also suggested about a 70-year cleanup plan with a projected cost at Rocky Flats of over $30 billion.

The decision was made a couple of years later, I think in 1997 roughly, to make this a site that would be cleaned up in an expedited fashion, with a goal of a 2006 or 2007 cleanup period. We are basically on track to get that done, and we fully funded all the programs at Rocky Flats to keep on that track, which means that it will ultimately, I think, have been cleaned up in about 12 to 13 years from the point when we were told it would be 70, and the projected cost from 1997 forward to finish the job is going to be less than $7 billion based on our current estimates.

Now, again, I am not suggesting we could do that at every single place where we have contamination in the complex that needs to be addressed, but it is a model that strikes me as well worth examining for application in other places, not only because it might save some money, but because it would mean that we actually are making significant forward progress in cleanup.

I would like to be able to say that the money we spend on environmental management at these sites is largely going to make cleanup take place as opposed to other kinds of overhead and so on.

I am not trying to denigrate anybody who is involved in this, and there has been a lot of criticism from different agencies that have looked at it, Congress and so on. I am not trying to say that. What I am trying to say is that I think that a management review taking some of the examples we have at Rocky Flats and Fernald, and that we might bring from new directions, and I think we will have a good management team to put these ideas together; can result in a process that is more expeditious and safer and ultimately less expensive.

Mr. Wamp. Thank you, Mr. Chairman.

Mr. Callahan. Mr. Pastor, is this Happy Cinco de May Day

Mr. Pastor. No. It is two more days. [Laughter.]

Mr. Callahan. Mr. Pastor.

Mr. Pastor. Mr. Chairman, Happy Cinco de Mayo on May 2nd. [Laughter.]

RENEWABLE ENERGY

Mr. Secretary, good morning and welcome.

What I would like to do is talk about some of the budget proposals that you have in the renewable energy area. It is an area in which I have had a lot of interest. As you know, in the Southwest, we are trying to develop and implement some of the research that DOE has completed and is now working with the private sector.

What disturbs me is that the fiscal year 2002 budget for renewable energy and energy efficiency of about $1 billion is about $156 million or 32 percent lower than this fiscal year. If you look at the different items in energy conservation, building research and standards is reduced by 50 percent, the federal energy management program is reduced by 58 percent, industry sector improvements is reduced about 41 percent, and transportation sector improvement is reduced by 23 percent.

If you look at energy supply, biomass and biofuels development reduced 5 percent, geothermal technology reduced 48 percent, solar energy reduced by 54 percent, and wind energy reduced by 48 percent.

The Vice President announced his or the administration's energy policy and in yesterday's article, the Washington Times says, and I quote, ``Mr. Cheney also for the first time announced the White House hopes to triple the use of renewable fuels favored by environmentalists--solar, biomass and wind power--from filling 2 percent of energy needs today to 6 percent within 20 years. The increased use of these technologies will come through breakthroughs in research, development,'' he said, quote, end of quote.

Somehow, what is in the fine-print is not consistent with what has been publicly announced, and what is the consistency that we are going to have as it deals with renewable energy?

Secretary Abraham. Mr. Chairman, if I might, I would like to give a pretty full answer here, and I do not want to cheat Congressman Pastor out of his time.

But I think this answer----

Mr. Pastor. In celebration of Cinco de Mayo, I think----

Secretary Abraham. The Chairman will understand. With your permission, I would like to give a full answer to that because there is a lot of--maybe you have other questions----

Mr. Pastor. No, no, if we can answer that, Mr. Chairman----

DEVELOPMENT OF THE FISCAL YEAR 2002 ENERGY EFFICIENCY AND RENEWABLE PROGRAM

Mr. Callahan. The Chairman will allow him as much time as he needs to respond.

Secretary Abraham. Okay. Let me give it a whirl.

First of all, you know, it is sort of interesting, the conclusions about what will be in the energy plan are being speculated about all the time. One of the speculations that you probably have all seen rather frequently is that there is going to be a major commitment to increasing the role of nuclear energy in the next 20 years; yet, you did not mention, but if you looked at the nuclear energy research programs in the Department, we are actually proposing an increase percentage-wise that is a greater increase than that which is connected to EERE, the energy efficiency and renewable energy area.

What we did in the budget was to try to not simply take all the programs that had been in place and the policies that had been in place and simply continue them forward without evaluation, particularly since we knew that the results of the Vice President's task force effort and ultimately the development of the President's energy plan might have significant impact on where we would in the future want to spend the money.

So what we did is this. Where we had some guidance from the President, as I said in my statement earlier, we have supported those programs and in some cases expand them substantially. In an area that is in the Interior Subcommittee's budget, for example, the clean coal technology area, we have increased by $150 million the clean coal programs. It is something the President was very committed to and remains committed to.

Where we did not have guidance from the campaign platform or prior to the Cheney task force, we have done a couple of things. We have tried to keep programs that we could immediately determine or at least that I felt were sufficient in terms of the support for them, to continue them at level spending, and in some cases, we, in fact, did reduce. I want to talk about some of those reductions because I think they need some public examination.

ENERGY EFFICIENCY PROGRAM

First let me talk about--again, it is in the efficiency area, but you did allude to the programs that dealt with the industries of the future, the buildings and so on, and the transportation.

That side of the equation which is in the Interior Subcommittee I think is a reduction from about $815 million to about $755 million in our proposal; but most of that change is in the transportation area and in a particular category with which I am very familiar, the Partnership for a New Generation of Vehicles.

I was a major supporter of this in the Senate. I came from Michigan, so it was something we had a lot of--as did our industries--a lot of interest in. But we evaluated this program, because I did know a fair amount about it, upon my arrival on the job in the context of where it is today versus where it was contemplated to be in 1993 when it was launched.

One of the major components of that program has been the development of kind of a model vehicle, a kind of electric car approach, that we concluded, after significant conversations with the industry, was no longer where they were headed. It is about a $41 million component of the previous year's program.

We decided that there were some very attractive components that remain in this whole area that have to do with more efficient parts of vehicles, fuel cell technologies, things like that, and we are continuing those, but when we discovered that there just was not going to be an ultimate application of the work that was being done in this area, we said we are just not going to fund it.

Now, Congress may, you know, argue that it should be and that discussion can go forward, but I did not feel comfortable even though it was a program I had been a major advocate of, after I got that information.

In addition, what we concluded, and this is where we had some Presidential guidance, that in the efficiency area, we were going to significantly shift resources away from investments in areas that we felt there could be greater--and should be and will be greater participation in terms of R&D by the private sector, to support programs where there would not be much of an alternative--specifically the Weatherization program.

Our budget reflects reductions in the Industries of the Future and the Buildings and so on, which are offset by a $120 million increase in Weatherization to help economically disadvantaged folks deal with the energy crisis and energy costs that they are encountering. We believe at the end of the day that we are keeping the core competencies of those programs in place so that if we conclude at the end of this National Energy Plan that they should go forward, that they could, but we felt, frankly, that the industries involved, which are major industries in this country, should pick up a greater part of the tab.

RENEWABLE ENERGY PROGRAM

Now, in the area of renewable energy, let me just talk about where we are headed. We identified some things that we felt deserved to be continued at level funding--the hydrogen technologies, the fuel cell technologies I mentioned, the distributed energy programs, programs that relate to superconductivity--because I happen to think that there are some strong promising opportunities there if we really are going to increase the share that renewable energy provides.

In the other areas, I have some pause, and it is a pause that is I guess based on a couple of things. One, we have spent a lot of money on geothermal, on wind, and on solar energy research over the last 20 years. We did a little calculus and in today's dollars, that cumulative expenditure I believe is somewhere in the vicinity of $5- to $6 billion.

At the same time, our Energy Information Administration indicates that if you look at the total percentage of energy supply that those three areas currently account for, it is about one-half of 1 percent, and that is up from less than one-quarter of 1 percent when the expenditures began.

Now, does it mean there cannot be more breakthroughs? Maybe there can. A lot of people--I have not bought into this argument yet, but I at least have heard a lot of people say that the technology side of this, the investment and research side, has largely matured, and that the role now is not so much, ``can we figure out a better way to build a mousetrap?,'' it is a question of, ``what do we need to do to translate these technologies to applications?,'' to get people to actually employ solar systems for their homes, or ``what do we need to do to, move in the direction of more wind-generated power?''

During this analysis, some people said, we have to look at regulations and maybe at tax incentives, some of those sides of the equation instead of more investment in this Department.

So what we did in those areas, because of these forecasts and because of what we had done, is we said, we are not going to cut these programs entirely, but we are going to kind of scale them back subject to both the results of the Cheney task force as well as further analysis of whether or not more research investment was the logical way to spend money.

RENEWABLE ENERGY BUDGET AMENDMENT

Let me just say at the end of the day, in the area of renewables, after a budget amendment, we will be--I think that is forthcoming very soon--be spending about $277 million, which is about $100 million less than last year. However, if you take out of the current year appropriated level, those activities that are one-time Congressionally-directed projects, it is about a $60 million reduction, and I think in light of this analysis, it is not inappropriate as we wait to see what the results of the task force and further evaluations are.

Now, I know others view this differently, but I guess I was concerned when I saw that the percentage that renewables have played is at the level I just indicated, and when we asked the Energy Information Administration to give us their projection for the next 20 years, they project that those three forms of renewable energy are unlikely at the end of 20 years to provide more than about .78 percent of 1 percent of our supply, and I want to analyze that a little bit more before we continue those expenditures.

RENEWABLE ENERGY TECHNOLOGIES

Mr. Pastor. How do you compare, then, yesterday's statement by the Vice President saying that we are going from, you know, 2 percent to 6 percent, and he sees that there is to be greater efficiency in terms of going from research into actual implementation.

Secretary Abraham. Right. That is where----

Mr. Pastor. And then, by your actions, by reducing, there seems to be inconsistency.

Secretary Abraham. No, I do not think there is because I think he is talking about actually getting--first of all, I mentioned three areas of alternative energy.

Mr. Pastor. Right.

Secretary Abraham. There is also biomass, which actually provides about 2 percent of the current energy supply. So when it is added to the others, that is why we are at about the 2 percent level he said.

Now, we are, as you know, funding the biomass research in this budget at about $81 million within our Department, within the Renewable Energy Program, there is some additional money in the Office of Science budget for that and in other agencies of the Government, and we see that as a growing source.

We also see increases because of the translation that I just discussed over the next 20 years of technologies we have developed to applications in terms of people actually using these technologies, because that is where I have been at least informed there is right now a bit of a challenge. And then there are these areas that I mentioned of hydrogen and fuel cell technology that we want to continue to support and believe can begin to enter the equation. But that is the point.

The question is, how much more do we need to do in terms of the research in those three areas as opposed to how much actually has already been done, and how do we take the research that has already been done and start translating it into people actually using these as energy sources? And that is what I think we need to work more on, and that is how we would hopefully get from the current level to a level that is higher.

Mr. Pastor. Thank you, Mr. Chairman.

CLEAN UP AT ROCKY FLATS

Mr. Callahan. Mr. Wicker.

Mr. Wicker. Thank you very much. And I apologize for being late. We have your colleague, Secretary Thompson, down the hall in the Labor HHS Subcommittee.

Secretary Abraham. Save all the tough questions for him.

Mr. Wicker. Actually, I am sure this has been touched on, but in this committee's jurisdiction are two very important areas of subject matter: your energy concerns with very important priorities there, and also the water aspect of it. We have to balance those out, and I think the Chairman has been very forthcoming in explaining to the administration we are going to have a little more money on the water side of it. That is why I was so encouraged to see in your testimony about Rocky Flats, and as I came into the room, I believe, Mr. Secretary, you were responding to a question and using that as an example.

Let me just make sure that I understand how good this is. As I understand it, this was initially to be a cleanup site until the year 2065; is that correct?

Secretary Abraham. It is my understanding, and I was not obviously present at the point when these plans were put together, but my understanding is that the cleaning-up process at Rocky Flats was at one time projected to take approximately 70 years and cost over $30 billion. Now, I do not know what its status was going to be throughout that period, but essentially it was a site that was more managed than cleaned up, because obviously we have demonstrated that you can clean a site up quicker than 70 years. So that is my understanding of what the plan was.

Mr. Wicker. The figure I have is $37 billion.

Secretary Abraham. That is right.

Mr. Wicker. Now, who was going to manage that? Was the department itself going to do that or was that going to be contracted out?

Secretary Abraham. You know, again, I would have to get back to you on the specific relationship. I mean, obviously we have at Rocky Flats a complete cessation of activities there in terms of DOE weapons activities as had previously been the case, so there would not have been a reason to maintain it under DOE operations because those operations, you know, are over. Whether the plan was to have the environmental management or a remediation contractor manage the site, I would not be able to tell you.

[The information follows:]

Rocky Flats Clean-Up History

The previous estimate that the cleanup of the Rocky Flats Environmental Technology Site would cost $37 billion and take nearly 70 years to complete was provided in the initial 1995 Baseline Environmental Management Report (BEMR). One of the primary factors driving the cost and schedule estimates at the time was the lack of clear disposition paths for the special nuclear materials managed at Rocky Flats and cleanup requirements. At that time, the contracting approach was to employ an integrating management contractor to coordinate the cleanup efforts. Kaiser-Hill (K-H), L.L.C. was awarded an Integrated Management Contract (IMC) in 1995. As K-H and the Department worked to refine the plans for achieving closure, significant, strategic revisions resulted in plans for accelerating the site closure, including the development of disposition paths for the nuclear materials on site. Several baselines were developed that reflected increasingly aggressive projected schedules for site closure (2015, 2010, and 2008) prior to the development of the 2006 closure project baseline in May 1999, as the term of the IMC with K-H neared completion.

Due in a large part to these significant efforts to refine and accelerate the closure schedules and maintain schedules for consolidating special nuclear material, the Department decided to pursue negotiations for a sole-source contract with K-H for completing the Rocky Flats Closure Project by the target date of 2006. Negotiations were completed successfully in late 2000. The new contract is significantly different from the previous contracts. It is a closure contract (cost plus incentive fee) that defines a target cost and schedule for the project. It also includes significant incentives for the contractor to achieve--and even exceed--the contractual goals.

This contracting approach is innovative, and is serving as a model for other closure efforts within the DOE complex. It is not necessarily applicable for all cleanup efforts, but comparable, innovative techniques are being pursued within other contracts to reduce the cleanup baseline costs.

APPLYING THE ROCKY FLATS EXPERIENCE

Mr. Wicker. Well, what I am interested in, I mean, when I hear $37 billion has now turned into $7.3 billion, it gives me hope that we can find other areas of savings. I would just like to understand is there something unique and one-time about just a couple of these projects, or is it something that we really, really can look at in terms of other areas?

Secretary Abraham. Here is what I would say. First of all, I think there is certainly expertise to be derived from any of these experiences. Whether it is, as I said in my comments earlier, possible to apply the exact same model at every place where we have major management challenges, I will not say that today.

But what I will say is that we made the decision based on the success of this effort to select for the under secretary position the gentleman who is the CEO of the contracting management team that has been doing this, and we have selected to be nominated for the Assistant Secretary for Environmental Management Jessie Roberson, a woman who was the Rocky Flats DOE manager in charge of our operations, the Field Operations Office manager there during part of this period.

So I think we can take that expertise and apply it, especially to this overall management plan that we are going to develop.

Mr. Wicker. Well, it certainly is an encouraging development, and at first blush it sounds almost too good to be true. So I look forward to exploring this possibility with you.

Secretary Abraham. Thank you. And I would just say that my impression working with a very fine group of people in the building who work on these projects--and I want to stress that, whatever the criticisms have been, it is my observation that the people at DOE who are in these areas are very positively motivated and want to get their jobs done, but I do think having a top-down focus on actually completing these sites, making that a priority, establishing that kind of short-term commitment, from the conversations I have had with people who have been participants, was a major part of the reason that the success has been achieved.

In other words, when people stop thinking that, well, we are not really ever going to accomplish anything during my time here, but somebody who is twelve Administrations from now in this job gets the credit for closing a site, I think it changes the way we do business, and I hope we could find other sites that could be moved into a more expedited time frame.

Mr. Wicker. Thank you, Mr. Chairman.

Mr. Callahan. Is that a vote? A series of votes? Well, I guess we have time for one more.

Mr. Clyburn.

HEALTH AND SAFETY AT SAVANNAH RIVER

Mr. Clyburn. Thank you, Mr. Chairman. Mr. Chairman, I am going to be brief. And thank you, Mr. Secretary, for being here.

I am particularly concerned about the environmental management aspect role in this and, of course, I do know that the Savannah River site has been pegged for a $159 million decrease. Of course, that site is not in my congressional district, but I am concerned about its impact on the 2000 jobs that are under threat here.

I am particularly concerned about the people of South Carolina who live in and around that plant, many of whom live in the lower part of South Carolina. They are concerned about safety and security.

I would like to know what kind of analytical studies may have been done that brought you to the conclusion that the Savannah River plant can remain secure and be safe for the people who are living in that part of South Carolina and, of course, those who live over in Mr. Norwood's district over in Augusta, Georgia, that if we make this big reduction, that we are not sacrificing safety.

Secretary Abraham. Well, first of all, rest assured that those who represent the Savannah River site directly have also been in touch on behalf of the communities that are there, and we are working with them.

What we have set up as a criterion for the use of the resources which we have for the sites is to examine each site in terms of whether or not there is a health or safety risk and to address those first at all the sites, including Savannah River.

There is a tendency, I think, sometimes to assume that every single dollar that is spent at a site is spent on environmental remediation. As you know, that is not the case. There are various degrees of work, from regular cleanup efforts to the amelioration of high-level challenges that pose direct health and safety risks. I can assure this Committee that the budget which we have is more than sufficient to deal with all high-level or any kind of a direct risk to the health and safety of the people of the communities in which these sites repose.

What I am trying to do is to be able to come back to the people of Savannah River, I hope fairly soon, once we have completed this analysis, and tell them that the good news here is that instead of being in a situation where they, their children and their grandchildren are all going to have to have these kinds of concerns, that we are going to try to address them during their lifetime, soon, by changing the way we try to do business at these sites to get them completed, as I just indicated, in a much shorter time frame.

I believe that can be done. I think that the evidence we have from the sites which I have mentioned, Fernald and in particular Rocky Flats, demonstrates that that can be done. But it will not be done if we continue the approach which says it is going to be done over 70 years, we are going to make incremental gains each year in terms of total site cleanup, and then finally at some point way off in the future, after all of us have left public office, somebody is going to finish it. I do not think that is the way to get it done, and I think, if anything, if I lived in that community, that would be the kind of response that I would expect out of the Federal Government.

In the meantime, we are addressing all the health and safety risks that we identified during this budget process as being posed at the sites, not just Savannah River, and we will be addressing them. Some of the other activities that go on at these sites are not going to receive perhaps the same attention they have in terms of commitments of money for community liaisons and these kinds of activities. We will do the most we can, but our principal goal is to try to address the cleanup of the highest priority challenges we have, to finish the Rocky Mountain and Fernald sites on time, to keep on track, and then to address some of the other priorities in these sites as well.

Mr. Clyburn. I think all that is a good goal, but my concerns to a great extent have to do with people who are there now who see these headlines about the budget, and the anxiety that I see in all of them. It seems to me that it is somebody's responsibility now to start some kind of a discourse so that we will be able to explain to these people that there is some organized method here that will be a benefit to them in the future. Right now, they are anxious, they are nervous, and I have lived with that plant all my life.

Mr. Callahan. I think I might interrupt and tell the gentleman it is someone's responsibility, but it is my responsibility to get you all over there to vote on these things at this time. [Laughter.]

Mr. Clyburn. I appreciate it, Mr. Chairman.

Mr. Callahan. I will allow the gentleman to continue his question.

Mr. Clyburn. Well, that is all I have.

Mr. Callahan. Mr. Secretary, you are welcome to use the members and staff office there.

Secretary Abraham. Thank you.

Mr. Callahan. We will be back. We have a series of votes.

Secretary Abraham. More than most, I understand fully that you need to make the roll calls.

[Recess.]

Mr. Frelinghuysen [presiding]. The meeting will come to order.

Thank you, Mr. Secretary. We are going to resume. Even at the risk of incurring the Chairman's wrath, we are going to begin.

Secretary Abraham. As long as the record shows it was not my suggestion to start without him. [Laughter.]

Mr. Frelinghuysen. May the record show it was the staff's suggestion to the vice chairman.

Mr. Doolittle is recognized for some questions.

Mr. Doolittle.

CALIFORNIA ENERGY CRISIS

Mr. Doolittle. Thank you, Mr. Chairman.

Mr. Secretary, it is wonderful to have you here with us today. We appreciate that.

Mr. Secretary, when I was out in my district over Easter, the Sacramento Bee, which is part of the McClatchy News Corporation, ran a story indicating that the Bush administration hates California. That is basically a direct quote. And I just wondered if you could clarify for us. Does the Bush administration hate California?

Secretary Abraham. It is our official position. [Laughter.]

Well, I would just say, Congressman, and I know that we have a couple Members of this Committee from California, and I think you know because you and I have actually been in California on occasions in the past together; that is not either the position of our Department, myself, or the President.

We take very seriously the problems and challenges that California is encountering right now, and we have tried since the first day of our Administration to work with Governor Davis to address those things which he has asked us to address.

Mr. Doolittle. Is there any request that Governor Davis has made of the administration other than price caps that has not been granted?

Secretary Abraham. To my knowledge, no. Certainly not with respect to requests of our Department or, that I am aware of--I believe that whether it has been to extend emergency orders for the sale of electricity and natural gas, which we did on our third day, I guess, in office, to working with him to expedite permits for the development of new generation in the State, we have agreed and have supported his requests.

The price caps question is one where we have a different viewpoint, as is well known, but with regard to the issues that have been brought to me, we have attempted on every occasion to be supportive and fulfill the request that was made.

MITIGATING ROLLING BLACKOUTS IN CALIFORNIA

Mr. Doolittle. Thank you.

Mr. Secretary, we face a very difficult problem in California with extensive rolling blackouts being projected, I think, by just about everyone for this summer, and I just wondered, is there anything that you are aware of that would help mitigate or indeed avert that circumstance from occurring this summer?

Secretary Abraham. Well, as I said earlier and have testified on before, the current projection is that there is a delta of about 5,000 megawatts between the projected peak demand this summer and supply.

California has, as you know, been very successful over the years in terms of energy conservation, and yet in spite of those efforts, it has not been enough to close that gap, and new generation is going to be needed. I think the Governor has made that very clear as one of his priorities. But it takes time for new generation to be brought online.

Whether there are additional conservation opportunities, I mean, that is one possibility. I have held a couple of meetings, I brought together a conference of the various energy suppliers, those who sell energy in California, and made it very clear to them that we expected people to perform at the maximum level they possibly could, because we had seen instances where rolling blackouts had been triggered by shutdowns of facilities that had not perhaps been sufficiently discussed ahead of time, and at least that seemed to be the case, or because of acts of nature that perhaps could have been averted with more safeguards put in place, to try to make sure that happens.

We are looking at ways to conserve as well from the Federal Government's point of view, and I think that, we have already made some major headway in that over the last of years with facilities in the State because we are a major energy user in California, and I think there is the potential to do even more on that front.

But that is the challenge, and there is just no way to bring new energy sources online as quickly as to meet the summer challenge.

We are also trying to look at the issue of some of the facilities that are not providing energy right now, the qualifying facilities, the ``QFs,'' some of whom have been offline because their contracts are with utilities, they have not been paid, and so they are not in a position to keep functioning, and we--I am not sure what can be done about that, but that could help close the gap a little bit, although the 5,000 differential contemplates them being operational and right now some of them are not. In fact, the most recent blackouts were triggered I think because of QFs going offline because they had not been paid.

LEGISLATION WAIVING CLEAN AIR ACT

Mr. Doolittle. I understand that there are a number of businesses throughout the State that collectively have approximately 600 megawatts of standby generating capacity, but that these cannot be used because of certain requirements of the Clean Air Act.

I also understand that Union Pacific Railroad--I think this is just Union Pacific, although it may be all the railroads in California, have 4,000 additional locomotives, each of which is capable, I think, of generating 5 megawatts, and that those could be put to emergency use if, indeed, once again, the requirements of the Clean Air Act were waived so as to allow those locomotives to be turned on and generate electricity.

Mr. Hunter has a bill which I have cosponsored which would waive--actually, it would change the law and allow in certain shortages of electricity, I think either Stage 1 or Stage 2, for the standby generators to go online.

I guess my question to you would be, would the Bush administration support that bill and would it put its influence behind proposals to waive some of these requirements so that we could get through this summer with as minimal a disruption as possible?

Secretary Abraham. The administration would be concerned about any move to waive or suspend the implementation of the Clean Air Act, but obviously we would, you know, we will review any bill that, you know, comes before us and take into account the considerations the state might ask us to look at. But----

Mr. Doolittle. So if the Governor made that request, you would be more receptive to waiving the sacred Clean Air Act?

Secretary Abraham. Well, I do not want to speculate on issues that are outside of the portfolio of my Department as to what EPA might, you know, think and so on. I think probably Administrator Whitman would have to be the person asked about that. But I would just up front indicate that I think we would be concerned about any federal action to change, you know, or waive provisions of the Act at this point.

Mr. Doolittle. Well, my time is up. Just to observe, if we have these rolling blackouts and we lose air-conditioning in parts of California, which, you know, routinely are over 100 degrees in the summer, you will have people die from that. So even the Clean Air Act might have to give way for the lives of other people.

Thank you, Mr. Chairman.

Mr. Callahan. Mr. Secretary, I apologize for my tardiness in returning, but I was summoned by the chairman of the full committee and the chairman of the Budget Committee to discuss some possible changes and increasing the amount of money we might have available. But you can rest assured I told them that Energy had the right amount of money at the right time. [Laughter.]

Secretary Abraham. Thank you, Mr. Chairman. I know I speak for all 16,000 employees in the department for your steadfast commitment to our current budget proposal. [Laughter.]

Mr. Callahan. Mrs. Roybal-Allard.

IMPACT FROM ENERGY CRISIS IN CALIFORNIA

Mrs. Roybal-Allard. Thank you, Mr. Chairman.

Mr. Secretary, I would like to follow up a little bit on some of what has already been covered, if I may, particularly as it pertains to California. Congressman Doolittle read a headline that said ``Bush Hates California.'' Now, I think one of the reasons there is at least that perception is because of the fact that very little has been done from California's standpoint by the administration to address the immediate crisis.

Now, California has taken several steps that will address the crisis, but really will not have an impact until perhaps June or July. The real crisis period is this month and going into June.

I think what feeds into that perception is that when you consider the fact that California is a major State, a major economy in this country, and that there are businesses that are closing now. For example, the L.A. Dye and Print Works, which was one of Southern California's largest textile firms, closed its door in April because of the natural gas costs that have absolutely soared to over $600,000 per month, which is 5 times higher than what they were paying in 2000. There are other businesses that are saying they are going to have to move to Mexico. People are being laid off.

And as was mentioned earlier by Mr. Frelinghuysen from New Jersey, although right now it is California and other Western States that are experiencing this crisis, it is a crisis that potentially could impact the entire Nation. In fact, there was a Wall Street Journal article dated April 26th which says: ``Why California isn't the only place bracing for electrical shock. In a deregulated environment, many States are vulnerable to erratic price and supply.'' So potentially maybe in a different form, there is going to be an energy crisis that is going to impact the entire country.

Yet neither in your spoken statement or in your written statement do you address in any way, not even in a footnote, the energy crisis in California and the potential crisis that could impact the Nation. So I think those are the kinds of things that feed into this perception.

I just want to highlight a little bit of the background as to what is taking place, because I think it is important for the public to understand what is happening in California potentially could happen in their own State.

For example, in 1999, California was paying a total of $7 billion for electricity. Last year, we paid $32.5 billion, and the price tag is expected to go to $65 billion.

California's grid operator provided data to FERC in March documenting that $6 billion in overcharges were done by electricity producers, and at least twice FERC itself has found that prices, and I quote, ``are unjust and unreasonable'' in the Western electricity market under the Federal Power Act. Yet the Commission has refused to take any real meaningful action. The administration has potentially said that is California's problem. And although there are certain actions that have been taking place--and you have alluded to them earlier--they are more in the long term. And what we need right now is some short-term support.

One of the things that has been suggested, which I believe that you have referred to as price caps, has been the true cost of service-based rates in the West. And these really are not arbitrary caps, as you have mentioned, but would be calculated individually for each plant in the West, reflecting their true costs for generating the power, plus a return on invested capital and a reasonable profit. And this is a recommendation that does not just come from California, but Governors from Washington, Oregon, Arizona, Montana, Nevada, Utah, and Wyoming have also supported this type of cost for service rate.

ADDRESSING THE ENERGY CRISIS NATIONALLY

I guess my question is: Why, particularly in this hearing, has there not even been a mention of the crisis, not just in

California but in terms of what your agency is planning to do to avoid any future crisis that is being predicted will ultimately impact other States, for example, like New York?

Secretary Abraham. Well, first, Mr. Chairman, I may need a little bit of time to respond to this, and I do not want to cheat the Congresswoman out of her period, but if I could have a little bit of latitude here.

Let me first of all begin by saying, you know, the purpose obviously of the hearing today is to discuss the fiscal year 2002 budget and the problems in California are happening right now. So I have been looking at next year's budget, and I am happy to talk about what we are doing right now, not just for California but for the West.

First of all, we do care very much about California, and we care so much about it we are not going to take actions that we think will make the blackouts worse, longer lasting, and more permanent. And I happen to believe and have testified previously on the Senate side that price caps will do all of those things for reasons which I would be happy to go into and will.

But let's begin with just sort of an analysis of the problem. Higher prices that you are encountering are a result of an inadequate supply-demand equilibrium. You have got a lot more demand than you have supply, and that is why the price is going up, not just in California but throughout the West.

Now, we can sit here, and others have, and quibble about or castigate decisions that were made in California in recent years to not build new sources of supply. That has been done plenty. And my point here is not to criticize those who voted against local initiatives on the building of new power plants or those City Council people who very recently decided not to go forward with power plant construction, even when local community support from the Sierra Club to the American Lung Association was in favor of it. I mean, those were decisions that caused us to have this huge gap between supply and demand. And the way that gets expressed is in one of two forms: either you ration supply with price changes by passing along to customers these high prices and they decide as a result to not spend--not to use as much, and that is one way, or with blackouts, which is more or less what has been happening. But that is where we find ourselves, and that is why the price problems have happened.

ENERGY PRICE CAPS

Let me talk about what I think price caps would do, whether they were cost-based price caps or arbitrary or any other kind. I believe that they would send California and perhaps other parts of the West into an even more devastating series of energy shortages. First of all, if you cap these prices, then you are going to have even less incentive to reduce demand. And that will mean that there will even be more strain on the system.

In addition, I think there will be significant discouragement to the generation of new supply, because people who were thinking about investing in more generation are going to be discouraged by the idea that perhaps they would find--

after they made an investor-wise decision to go forward with a power facility, they would find themselves with a different equation in terms of the return on investment.

And I think that will mean that this summer you would have even more severe blackouts and that the blackouts would be longer-standing because the new generation would not take place. That is our assessment. And I have not heard anybody who has made a case that that will not be the kind of effect.

Now, the separate issue of the charges needs to be also addressed. The ISO, as you indicated, in March of this year indicated that over a 10-month period of time last year, for the most part, had--that there had been over six--you mentioned $6 billion of overcharges. This administration supports market-based prices. We do not support unjust and unreasonable prices. We fully support FERC's efforts, I would hasten to point out, since Chairman Hebert took over, to begin refunding part of these overcharges.

But it is important to put some things in perspective. The overcharges are a collective amount from all the entities that sell electricity. The Federal Government--FERC, we at the Department of Energy, and so on--only regulates part of the market. The municipals, the cooperatives and so on are not regulated by us. So a big percentage of those overcharges were not charges we could seek refunds for because we have no capacity to order them. And I might add they are also people over whom we cannot apply price caps. So that even if we were to go forward with a cost-based price cap, it would only apply to some of the entities but not all of--in fact, it would be less than half of the entities in California. It would mean that the other entities who we cannot control could buy the cheaper cap prices from the entities over which we would apply a price cap and resell it at the higher price.

Moreover, it means that with respect to FERC's efforts, FERC has been very responsive and I am glad they have, but since Chairman Hebert took office--to begin ordering refunds. But, unfortunately, as you know, the law only allows you to go back 2 months. So we can't go back and order--at least FERC can't go back and order, refunds for last year. I think it is unfortunate that when these higher prices began, some would certainly--apparently the ISO would argue were excessive and unjust, that they weren't average, but seeking refunds at that time, that it didn't happen. FERC only has, I believe, a 60-day retroactive window to act within, and we are doing that. The FERC has done that.

So that is the assessment of this. I mean, I just believe price caps will make the blackout situation far worse. I think that will result in even greater economic disruptions because, as people have, I think, become aware, if you shut down some of the high-tech production facilities without adequate notice, you are talking about $1 million an hour kinds of costs. That is what has been incurred. Other businesses I am sure feel the same kind of effect.

If you impose price caps, I believe that those shutdowns would be longer, and I do not think you would get back on the right track for a long period of time.

As to the advocacy for this, I would point out just for the record that several of the Governors who you mentioned have subsequently changed their position and are, in fact, opposing price caps at this point. The three Governors, I think, from the West Coast do still endorse and support them.

CALIFORNIA ENERGY PROBLEMS

Mrs. Roybal-Allard. I just want to point out one of the comments. There have been a lot of comments made that one of the reasons that California is in this situation is because of our environmental laws. But I would like to point out that in the States where there are no such environmental laws, that power plants were also not being built. The reality is that the reason they were not being built was not because of environmental laws, but because it was, you know, cost--it was a cost-related thing. There was really not a profit in so doing.

Secretary Abraham. Can I comment on this? Because it really is supportive of the original point you made. This is a challenge that not just California but the whole country must confront, and you are right about that. Communities and States who decide that they are going to allow demand to continue to increase for energy--and Americans' demand I think will increase, notwithstanding our best efficiency efforts. We have to make sure supply is available to meet that demand. In some cases--you know, we are a country which loves to use electricity and energy, but hates all the sources of energy. And over time, there has been opposition to virtually every source out there, including most recently renewable sources. Hydropower is killing fish, and windmill farms endanger birds. I mean, it has become all-inclusive.

And I am not saying that we do not have to be sensitive to the side effects of energy production in an environmentally sensitive way. But what I would say is that communities act at great peril if they take the position that they are not going to make decisions with respect to energy supply that keeps up with the demand increases that they are encountering, whether it is California or anywhere else. And you are absolutely right, and the article that you reference is right, that other parts of the country can encounter the problem. But they are going to encounter it if they do not allow--if they do not recognize and evaluate their supply needs and try to address them in an effective way.

Again, I mentioned--and I do not want to just single out California, but there were decisions not to build facilities that did, in fact, meet environmental and regulatory safeguards, partly because communities say, ``do not build it here, do not build it in my back yard.''

Well, I understand that thinking, but there are consequences ultimately if no supply generation is built anywhere, whether it is for one State or a whole region.

VICE PRESIDENT CHENEY'S ENERGY TASK FORCE

Mrs. Roybal-Allard. Mr. Chairman, I know my time is up, but just for the record, if I could just say that I am very concerned, with Vice President Cheney's task force, that they are recommending a policy that relies almost entirely on increased production. I think that if we are going to have a real comprehensive national policy, it needs to be just that, comprehensive, and not just rely on increased production but also on conservation.

Secretary Abraham. And if I could just say, Mr. Chairman, this task force has not completed its work. The speculation in the media as to the nature of the recommendations is premature. And it will definitely be a balanced set of recommendations which will demonstrate a role for efficiency and conservation.

I would also note that in California, as I have said, if you look at the conservation effectiveness of the State of California, as I think I said to Congressman Doolittle, California is right at the top of the list. They have done a great job. But all of that alone was not enough to offset the increases in demand that have occurred in the last 5 to 10 years.

Mr. Callahan. Mr. Latham.

INCREASING REFINERY CAPACITY

Mr. Latham. Thank you, Mr. Chairman. And welcome, Mr. Secretary.

I just want to say, first of all, I am so pleased that we finally have people who are going to actually put together a national energy policy. I think everyone remembers last year when we were experiencing major price increases in gasoline that former Secretary Richardson, and to quote him, said that the administration was ``caught asleep at the switch,'' that there was no energy policy, and that they had not thought through the situations that we had gotten into. I just want to compliment you for, I think, a very, very thoughtful approach to this huge problem that we have. It is a nationwide problem, and one that I am very pleased that you are finally addressing, and we finally have an administration that will look at a national energy policy.

What I am hearing on gasoline prices and a major increase is that we do have a major problem as far as refinement capabilities. There is such a patchwork situation of different grades of fuels and different blends around the country that they are in a very difficult situation just volume-wise, but then, again, to get the right kind of fuels for the right kind of States and people have different regional problems.

Could you address that for me, please?

Secretary Abraham. Well, there are a lot of factors that are part of the equation with respect to gasoline, prices or the price of petroleum products after refining.

Certainly the overall worldwide supply of oil that is available for production is a prime factor, but the problems that you have just referenced are also factors as well.

Here is what has happened. We have not built a new refinery in this country I do not think since about 1976. And so even though the current existing refineries are operating at a production level that has allowed total production that takes place to be at a relatively stable level, even perhaps a slight increase, the straining of the refining capacity at peak periods is a big problem, as I understand it.

For example, if unusual developments occur, such as happened up in my part of the country, in Michigan last summer when we had a pipeline explosion, there was not adequate refining capacity to compensate for the shutting down of that pipeline that connected Chicago to Detroit. There were no refineries in Detroit to take up the difference.

When we go through these seasonal changes in terms of the product being refined in the refineries, for example, the transition from home heating products to gasoline products as we move from winter to the more sensitive driving periods of the summer, takes time. And when you get into these periods where the refineries are working at full tilt, unless they have had a chance to build up inventories in the intervening slower periods, then we have these price spikes that result from an inadequate supply being available.

You mentioned the fuel issue, the boutique fuels, as they are sometimes referred to. That is a problem when we go through these seasonal transitions. In the Midwest last summer, as I think, looking at the panel, at least one member here from that region, we had--we will extend over to Pennsylvania. I am sorry. But, you know, we had in our region there from Chicago, through Indiana, through Gary, up through my home area in Michigan, big spikes. There were several factors. But one of them was the fact that the transition in the refineries for the manufacture of the special fuel that was needed, the gasoline that was needed for the Chicago, the Milwaukee area for the summer, for the first time it was being manufactured, and the transition took some time. And that racked up supply as well.

Now, they are hopeful--and I have talked to people involved in the process--that having done that last year, we are in a better position this year to make that transition. But when you have a slow-up in supply of your refinery capacity, as strained as it is in this country, then you are going to have spikes of the sort that we encounter. And one of the things we are looking at in the context of this task force is what are the impediments to developing more refinery capacity.

Obviously some of those impediments are ones that Government may be able to address, and some where it can not. One of the issues has been that for some time the margins that were available, the earnings or whatever, the earning margins, the profit margins for the refineries, until maybe the last 18 months or so, have not been very great. And so the incentive from an investment point of view, as I understand it, has not been very great either.

BIOMASS

Mr. Latham. I would just say, being from Iowa, that obviously I would hope that there is real consideration for clean-burning renewable fuels such as ethanol, biodiesel, and soy diesel. I actually have the largest wind energy farm in the country in my district right now. The cost has come down, I think, about 80 percent as far as wind energy. It is very, very profitable for the farmers themselves. They love it, to get that check every month, when they are otherwise having rather difficult times. It has made a difference, I think. But certainly I would just encourage you to make sure that ethanol and biodiesel are part of the equation. And with the California situation, obviously, the attainment, with no longer being able to use the MTB and hopefully replace that with a lot of ethanol out there.

Secretary Abraham. Senator Grassley always kept me well informed on this issue in the Senate, as do my corn farmers in the thumb of Michigan.

Mr. Latham. Thank you.

Mr. Callahan. I think Senator Grassley says what we ought to do is take it away from Defense and give it to Energy.

Mr. Secretary, I do not take pride of authorship nor do I support the suggestions that have come to my office that one possible solution to part of our energy problem might be for California to secede from the United States. [Laughter.]

But in deference to my colleagues from California, I am not supporting that--at this point. [Laughter.]

Secretary Abraham. Congressman, you may be able to run for President.

SECRETARY'S ROLE IN DEVELOPING NATIONAL ENERGY POLICY

Mr. Callahan. I am thinking about California and Florida.

In any event, seriously, I had thought somehow or another that this committee, this subcommittee, would be more involved in the formulation of the energy policy. Obviously there is going to be need for appropriations in the future if you have an energy policy because you are going to have to investigate alternative sources of energy.

Now, 2 weeks ago, on a codel to France, we met with the manufacturers of the fast train there. They explained to the members there that the reason fast trains are economically feasible in France was because of the low cost of energy, because they are electric.

When we questioned them on why this was, it was simply because they have 55 nuclear power plants there, and the cost of electricity there is so inexpensive that they run their fast trains much more economically than they can be run on diesel.

Secondly, we found that there were serious indications coming from Daimler-Chrysler that they would have a separation capability of hydrogen from oxygen and the capability of burning the hydrogen in an automobile or possibly at some capacity at a residence. And I wonder where we are on those two things. But I was quite surprised.

What position did you play in the formulation of the policy provisions that came out this week?

Secretary Abraham. Well, first, I want to reiterate that the Vice President's speech in Toronto was not a reflection of a final report. It was, I think, an indication of some of the things we have been looking at seriously. But the process, in fact, this afternoon I believe I have another meeting of principals, Department and Agency heads who are the task force members, to look at some of the recommendations that we have been debating again. There are a number of these issues that are still in debate.

NUCLEAR ENERGY

As to the two that you just mentioned, let me just say that, with respect to nuclear energy, that has certainly been mentioned in the media as a possible part of this task force, and certainly it is one we have been looking at. There are some significant changes that have transpired with respect to nuclear energy in the last 30 or so years since we most recently built a nuclear power plant in America.

Certainly there have been a lot of safety improvements, I think, in terms of on a worldwide basis, as countries like France have increased their use of nuclear energy. We have much to learn from that, I think. There has been a concentration to some extent, of ownership of facilities in the United States. And as I said to the group not too long ago, when these facilities were all being built by independent operators, local community utilities and so on, we had situations where maybe we did not have the kind of expertise at every single facility that would have been our preference.

Now I think we are moving in a direction where we have more experienced operators with longer safety track records to draw from, and I think that is an encouraging sign.

In addition, I think that the Energy Policy Act that was passed in 1992 with respect to the licensing procedures are ones that make it theoretically more feasible to go through licensing.

But there are some challenges that remain before nuclear energy can assume a greater role than it does today, one of which is, of course, the disposition of the waste. And we take this very seriously at the Department and have injected into the discussions of the task force the extent to which we must address that issue, because in the absence of having a confidence level that there will be a way to address waste in the future, it seems to me unlikely that new facilities are going to be invested in, and it seems to me that even existing facilities may not be--relicensing or full-life extension for existing facilities will be questioned.

So that is another part of it, and it is something that at the Department, as you know from this budget, we are proposing approximately $445 million of investment to continue the science evaluation so that a site characterization can ultimately be finished and presented to me so that I can examine that.

HYDROGEN

As to hydrogen, I mentioned in my comments that with respect to renewable energy, we had several areas in which we intend to maintain funding levels. One of them is research in this area. I think it is a very promising one, and we believe that there is much more that needs to be done before that is going to become a component of a renewable energy strategy. But we see a lot of prospects there for significant increases in terms of understanding and technology that can come about from research investments and hydrogen-related science.

CONGRESSIONAL PARTICIPATION IN ENERGY POLICY DEVELOPMENT

Mr. Callahan. One reason I wanted to be a part--or I know that my assumptions were not carried forth about being a part of this energy policy development, I will piggyback on Ms. Roybal-Allard's concerns about California being unjustly accused of not supporting any increases in power capabilities.

On the other hand, Alabama is just the opposite. We do allow drilling off the shores of our coast. That natural gas goes into a national pipeline, and ultimately some of it winds up in California. And as a result of the demands in California, the prices in Alabama have skyrocketed.

In addition to that, we have a nuclear power plant in Alabama that we have had few problems with. So why should the people of Alabama, who are allowing their natural resources to be used for their national energy needs, why should we be paying through the nose to satisfy a State need that has refused to allow their natural resources to be utilized for this purpose? I was hoping to have an opportunity to find a way of rewarding those States that are permitting use of this natural resource and maybe use that as a carrot to States like California who are saying, up until now, do anything you want in Alabama, do anything you want in Louisiana and New Jersey, but don't do anything in California, but ship us your natural gas from your coastlines, and ship us your power from your nuclear power plant.

So I wanted that opportunity to find a way to reduce the energy cost to the people of Alabama because we are doing what I think is the right thing, that is, permitting natural resources to be used to develop power.

Secretary Abraham. I think your concerns here are ones that need to be part of this debate, and I want to make just two quick points. One, the goal of the development of this plan was to get the Department and Agency heads who have responsibilities in the energy issues together to try to come forward with recommendations to the President. I do not think it is in any way the intent of anybody, part of this, to assume that once we finish those deliberations there is no role for Congress to play. The Congress will play a very integral role with respect to any of the issues that involve statutes or involve changes in the law. And we have not discouraged any members, and I would encourage--because this is not a finished product, even at this point, even though it is a late point in the process, to forward to me, I would be happy to convey to the Vice President----

Mr. Callahan. I understand that, but even in the formulation or the beginning of the formulation of a policy, I think that those States that are contributing to the energy needs of this country ought to be a part of that from the beginning. We ought not be piggybacked to that later on during the process. And that is why I would hope that this subcommittee or the Congress would have played a role in the basic formulation. But that is not to be.

YUCCA MOUNTAIN

Speaking of one of the solutions that you said needs to be done before we can make any advances in nuclear power, we can talk about the Yucca Mountain repository. I do not know what your personal commitment is to Yucca Mountain. I do know that there are some time constraints. I think the end of this year something must be issued by your Department or by the President in order to let this project go forward, in order to relieve the pressure that you say is prohibiting us from looking seriously at nuclear plants to resolve this problem.

I need to know your personal commitment to the Yucca Mountain repository. I need to know can you by the end of the year, or whenever it is, file the necessary indications that it is an acceptable site. I also understand that Nevada has a problem or that we have a problem with some water provision and that we have to have a water permit authority from Nevada. I do not think it is any secret that many powerful people are trying to do everything they can to stall the opening of this facility.

Secretary Abraham. Mr. Chairman, the responsibility I have is to assemble all of the site characterization science once it is completed, and it is near completion, and then to evaluate it as expeditiously but as comprehensively as possible and make a recommendation at that point or advise the President based on that evaluation. And I will commit to you certainly to move it, as I said, as expeditiously as I can, consistent with a comprehensive review, because I do not want to create any possible challenge to any actions that might be taken that suggests that somehow or another there was any predetermination on my part or anybody else's as to what should be the recommendation.

I think that it is important that we follow this as a matter of procedure as exhaustively as we can so that we can minimize the criticisms that I suspect would happen if there were to be a recommendation, because I want to be absolutely confident that I can defend any decisions that we make. That said, we will move as expeditiously as we can consistent with that responsibility that I take very seriously.

In terms of subsequent actions, as I think everybody knows, the process kind of moves back and forth. There is a role for the President to play. There is subsequently a role for the State of Nevada to play, because Nevada has authority, I believe, under the statute to veto a decision if there was a recommendation. The Congress, however, has a responsibility after that, if a veto were to occur, to override it. And, again, we are speculating. Who knows what our recommendation, if any, would be?

But those are other factors that are all part of the time frame and the time line here, because even after all of those things occur, there still is a licensing procedure that the Nuclear Regulatory Commission is responsible for, and that is, were it to be undertaken, a lengthy period in and of itself, and only after that is finished will construction be possible. And construction, even though obviously certain things have happened with respect to the science efforts and other things at Yucca Mountain, if that, again, is the direction that we would recommend, that takes time, too.

So I think everybody is well aware of the time constraints here, but no part of the process will move forward unless we are absolutely confident that we have comprehensively made the evaluations and that they are science-based, because that is the only basis on which we can proceed, I think, and a way to assure the people of Nevada or any other State where a site ever were to be placed that we have exhaustively determined that the health and safety of everyone concerned is going to be addressed.

RECISSIONS

Mr. Callahan. There is a $170 million rescission indicated in your budget request. What is that for?

Secretary Abraham. I would have to check. I am not sure. Perhaps someone who is with me----

[Laughter.]

Secretary Abraham. While I pretend to be looking through my own----

Mr. Callahan. Go ahead.

Secretary Abraham. I am not sure what----

Mr. Callahan. That is a last year rescission, it is 2001, though. That was a rescission from this fiscal year, which freed up $172 million. You do not know what that was for?

Ms. Wilson. $97 million was a privatization rescission and $75 million was nuclear waste.

Secretary Abraham. I knew that. [Laughter.]

Mr. Callahan. The $172 million, I think Jeannie just answered it. What constituted the $172 million?

Secretary Abraham. Please go ahead, Mike. Let me identify our CFO, Mr. Michael Telson, who would be more familiar with the current year budget process than I.

Mr. Telson. The first item is $97 million of the prior year budget was from prior year balances in the privatization account. It was used to fund a higher amount of spending for waste----

Secretary Abraham. Hanford.

Mr. Telson. Yes. It was $97 million from prior year funds. So, in essence, the program was $97 million higher because we had $97 million of prior year money to offset it. The second one is $75 million from 1996 funding, I believe it was, that was fenced in a prior year appropriation for Yucca Mountain. That again was used to fund a higher level of funding for the Yucca Mountain program.

Mr. Callahan. So it was earmarked in 1996 for a project that you no longer needed that money for, and you put it back in the Yucca Mountain request for 2001.

Mr. Telson. It was fenced for the Yucca Mountain project subject to certain findings, and last year the Administration and Congress determined it was okay to un-fence it.

Mr. Callahan. Okay.

Mr. Visclosky.

Mr. Visclosky. Mr. Chairman, I yield to Mr. Edwards.

Mr. Callahan. Mr. Edwards.

NONPROLIFERATION: BAKER-CUTLER REVIEW

Mr. Edwards. Thank you, Mr. Chairman. Thank you again, Mr. Secretary, for being here today. There are a lot of issues with which we would agree, and that includes the energy field, and I respect the administration's leadership in saying this country must have an energy policy. As important as the energy crisis is in California and our country, and it is, I would like to go back to the issue of our nonproliferation efforts against weapons of mass destruction that put at risk our American servicemen and women in the field as well as our civilian population in our neighborhoods. That issue does not get as much public attention in the press, and yet I think it is a vitally important responsibility of the Department of Energy and this subcommittee.

I respect the President coming out today and saying we ought to consider spending $200 billion on a national missile defense system because we must protect our American population. But I do continue to have serious problems about the inconsistency of that philosophy regarding national missile defense, and yet turning right around and proposing a $100 million reduction in our defense nuclear nonproliferation efforts.

Let me ask you one question first. The bipartisan Baker-Cutler review I understand earlier this year said this, and I quote: ``The most urgent unmet national security threat to the United States today is the danger that weapons of mass destruction or weapons-usable material in Russia could be stolen and sold to terrorists or hostile nation states and used against American troops abroad or citizens at home.''

Is there anything about that statement from that bipartisan report, Mr. Secretary, with which you would disagree?

Secretary Abraham. I have not had the experience of going through the comparisons that they did, but I have met with both former Senator Baker and Mr. Cutler on their report, and they have briefed me on it, and I take very seriously their conclusions. And I can assure you that the conclusions they have reached, which was a report from the Secretary of Energy's Advisory Board, have been incorporated in the review that I mentioned earlier of the National Security Council review of our deterrence and nonproliferation strategies.

I only would add what I said earlier or reiterate it, really, and that is that I do not believe that one should conclude that the decision, either the budget decision or certainly this decision to engage in a fairly rapidly moving review of these programs translates into a conclusion that somehow we have any lessened degree of concern about nonproliferation or in terms of the future a lack of commitment to these programs.

What we thought made sense, what the President's budget reflects, is a pause in some of these programs while we evaluate their effectiveness against a variety of other choices. And even as the Baker-Cutler report provided incentives to focus more resources on components of these programs, at the same time I think Congress is familiar with criticisms about some of the programs that have come in, I believe, from the GAO and others and outside critics.

We are trying to take it all into account. We want to make sure that as we move forward with expenditures that they are consistent with the result you want and that we want as well.

Mr. Edwards. I understand. If I could respond to that, I have no criticism of that approach. I think it is somewhat inconsistent, though, to say despite our not having the technology to put in place a national missile defense system, we should accelerate the implementation of that system when we do not even have the technology for it and have no idea really how much it will cost. So there is some inconsistency there.

COMMITMENT TO NONPROLIFERATION

But I do not question for one instant this administration's serious commitment to wanting to deal with nonproliferation. I just happen to believe ultimately in the public arena our values are best stated by where we put our limited resources. And as I look at your budget highlights, it looks to me as if you are proposing cuts in nonproliferation and verification and R&D by 15.7 percent; arms control, 31.7 percent; international materials protection, control, and accounting, 18.2 percent; and international nuclear safety, a reduction of 28.9 percent. And I will not ask you to respond, but it is my understanding that OMB's passback guidance to the Department of Energy for preparing this budget, including these serious budget cuts in such an important area, that OMB's direction to your agency was to reduce nonproliferation programs before there was any full analysis carried out.

I trust OMB in many ways. I respect their financial expertise. I am not willing to risk the future security of our servicemen and women or our families here at home to the accountants at OMB. And, furthermore, the budget highlights from your agency do not engender great confidence, and what I know had to be a fairly rushed process as a new administration comes in. That was not any blame to you or your agency.

REDUCTION IN NONPROLIFERATION PROGRAM

But on page 49 of your report, chemical and biological national security is cut by $12 million, and your own report's language says this program is to continue to develop technologies urgently needed--urgently needed--by domestic emergency personnel in response to the threat of terrorism.

On page 51 of your report, under the $30.9 million proposed reduction in international materials protection, control, and accounting, your report says, and I quote: ``Because of the high-risk reduction value of these efforts to protect weapons grade material''--and that is, by the way, nuclear weapons grade material--``these decisions to reduce funding in this area will be subject to ongoing evaluation and review by program personnel.''

That is not very comforting to me that what we are saying is let's cut $30.9 million in this high-risk reduction area dealing with nuclear material proliferation, but, you know, if that cut really did not make sense, we will review that in the future. That could be like putting toothpaste back in the tube if we make a mistake in that area.

I guess my request to you would be: Would you ask your staff to please add to the specifics of the budget highlights and help explain with great specificity to this subcommittee what exactly would be cut in the proposed cuts? At the end of the day, my hope is that we can work on a bipartisan basis to find the money necessary to increase those proposed cuts, because I think all of us on both sides of the aisle care deeply about protecting the servicemen and women and our

American families from the threat of mass destruction.

Secretary Abraham. We certainly agree with that approach and would be glad to share some of the more specific explanations. For example, just on the issue you raise with regard to international materials protection, I know that the reductions here are due to the completion of upgrades at most of the permanent sites. At least that is the understanding I have. I have been 12 weeks or so here in the job. I have tried to get acquainted with some of these issues as well as time has permitted. But that is my understanding of at least what the particular change in that area is.

But let us try to provide more specificity to you on these, as you would request, in terms of what the implications are.

[The information follows:]

Impacts to Cuts for Chemical and Biological and MPC&A Programs

The Chemical and Biological R&D program was reduced by $12 million which will (1) affect the development of new biological and chemical detectors, and the pace of the underlying biological research; and (2) reduce activity in subway chemical agent detection demonstration to planning.

In FY 2002 the decrease in MPC&A reflects the completion of upgrades at the majority of sites where warheads are stored on a permanent basis. Security concerns and site upgrade requirements of the remaining 30 warhead sites, mostly temporary sites will require fewer upgrades, will be assessed and implemented through visits by U.S. personnel.

NUCLEAR NONPROLIFERATION FUNDING

Mr. Edwards. Thank you. I appreciate it. That might allow us to remind OMB just how serious the implications of some of these proposed cuts that I think that we are pressured by them could be.

Thank you, Mr. Secretary. Thank you, Mr. Chairman.

Mr. Callahan. I would like to inform the members that you can submit questions to the Secretary, hopefully by tomorrow, and, Mr. Secretary, we would ask that you respond to these questions that Members have.

Secretary Abraham. Of course.

Mr. Callahan. I would like to also get the Secretary out of here within the next 15 minutes or so, but I do not want to cut anybody short, so, Mr. Frelinghuysen?

BUDGET AMENDMENT

Mr. Frelinghuysen. With that admonition, I will be brief. Thank you, Mr. Chairman. I am always listening to you. That is very good advice.

Mr. Secretary, I meant to commend you this morning for your Department's commitment to the Northeast Oil Reserve. That is important to those of us in the Northeast. Also, I had some questions relative to page 13 in your testimony, the fusion energy sciences. You made reference this morning that there would be some amendments coming before the committee. I assume that the account there for fusion has recommended or will be coming with some other recommendations.

Secretary Abraham. Congressman, in the budget rollout on April the 9th, we indicated that a couple of things were, in fact, going to be changed via amendment. The most significant of those really results in a transfer of money to this account from our Interior budget accounts. It is essentially a shift of about $39 million, which is largely in the area of renewable energy programs.

As I have indicated to you, it is our decision, subsequent to the drafting of the budget document, that we would maintain last year's fusion energy program at $245 million, I guess it would be, and what we have actually concluded is that we may not need to amend--to offer an amendment to accomplish that because it is all contained within this one budget. So we are trying to analyze now whether or not that is a change that requires a formal amendment submitted to the committee or whether or not it can be handled through an alternative means that does not require the submission of a new budget.

Mr. Frelinghuysen. So you are suggesting there may not be an amendment which would include a variety of things that you have discussed?

Secretary Abraham. What I am saying, there will be an amendment that is proffered that will indicate an increase in the budget for this Subcommittee of about $39.5 million, I believe, which would be monies transferred from the Interior Subcommittee component of the Department to this Subcommittee. Those would be in areas that were renewable energy areas.

Mr. Frelinghuysen. Let me----

Secretary Abraham. What will happen here is we would actually shift money from within the Science programs, from other science sources to the program that is the fusion program.

GASOLINE PRICE INCREASE

Mr. Frelinghuysen. Good. Well, I think we will take you at your word----

Secretary Abraham. The outcome will be the same.

Mr. Frelinghuysen. According to your statement. I just wanted to make a couple of brief comments on gasoline prices, the spike. You have made some attributions as to why those occur. I assume there is going to be diligence relative to the issue of price gouging. I mean, if there is a potential out there this summer, I assume you and the Department of Justice will be active in that regard. And, lastly, the MTBE as a gasoline additive, is that one of the things that is slowing up the production or sort of putting refiners--sort of making their push somewhat more tardy? I am one of those that feels it ought to be----

Secretary Abraham. It is expensive. I am not sure that it is the reason for the slow-up. But what we, as I said earlier, encounter are these transitional periods in regions of the country where the formula that is required for gasoline in one season changes in the next, depending on--for instance, in Chicago and Milwaukee, there are a variety of issues related to MTBE which the Environmental Protection Agency is focusing on right now. It is not within our purview.

But back to the earlier point you made with regard to price gouging, of course, we will, you know, be observant and diligent. But we also should not overlook the conclusions that the Federal Trade Commission rendered after they exhaustively studied these allegations that related to last summer's price spikes, which were specifically in my part of the country.

Mr. Frelinghuysen. All I am saying is the public needs a higher level of confidence, and if you are telling the committee they can have that confidence--I think most people understand the law of supply and demand, but in reality----

Secretary Abraham. Well, they can. And we will accept that responsibility gladly. But I do think it is important to not allow us as a Nation to always assume that somehow or another our energy supply challenges are fake, phony, exaggerated. Some of them are very serious. Over the next 20 years, we anticipate the demand for electricity to increase by 45 percent. That is in spite of significant conservation savings.

Mr. Frelinghuysen. All I am saying, if you are selling a national energy policy, one of those elements is that you have got to give the people confidence that all bases are checked, that everybody who is involved in this policy is up front, and their activities are transparent.

Thank you, Mr. Chairman.

Mr. Callahan. Mr. Doolittle.

HYDROELECTRIC GENERATING FACILITIES

Mr. Doolittle. Thank you, Mr. Chairman.

Mr. Secretary, it is my understanding over the next 15 years the bulk of the non-Federal hydroelectric generating facilities will have to be relicensed by FERC. That means this will be the first time in any substantial way that we have done this and taken into account the requirements of the Endangered Species Act, and all of these Federal agencies with some say in the matter will have their opportunity to exact a pound of flesh in the relicensing process and by imposing mandatory and recommended conditions.

We are very concerned that this could result in a substantial reduction in the amount of electricity generated by these plants as new demands are made for fish and environmental requirements. California, for example, generates, I believe--of all electricity that we use, about 24 percent of it comes from hydroelectric plants.

Is the Bush administration concerned about the potential out there for this kind of loss? And what are you doing about it?

Secretary Abraham. Well, as to the issue of the proper licensing procedures for hydroelectric facilities, we are concerned about what has already presented itself, which is the very lengthy time frames which these processes take. And one of the things which we are examining in the context of our energy task force is the licensing process.

As you probably know, there have been legislative initiatives discussed, maybe even introduced, as I remember last year in the Senate, by people concerned about the process.

On the more immediate side of the equation, we encounter already in the Northwest, of course, issues that pertain to the fish mitigation strategies of the Bonneville Power Authority, which present this summer a very serious challenge to us with regard to--I mean, that is, Bonneville presents a very serious challenge with respect to power production in the region because the water levels have been lower this year, and some of the water was spent early in an effort during the winter to help deal with some of California's problems.

So at this point, the Acting Administrator of BPA is, in fact, encountering exactly those kinds of choices. We have made the decision, he has made the decision to operate at a higher level than would be typically the case with respect to the fish mitigation responsibilities, as he does have the power to do under the emergency procedures or provisions which apply.

So that brings them squarely into focus for us, and we are trying to evaluate them in the context--currently in the context of BPA.

Mr. Doolittle. May I ask, Mr. Secretary, if you would prepare and submit later on for the committee--I would like to see a list broken down State by State and for all our territories for the decade of the 1990s the number of generating facilities per State and territory, how much each generates, and what type of fuel or what type of generation occurs there. I understand that Texas has a crash program of building generating plants, and I understand that we have not built any in the last 10 years in California. And I just wondered if we could have this information so that we could see what the rest of the country has been doing.

Secretary Abraham. I would be happy to try to provide it. I assure you we would, you know, do our best to get a comprehensive review of all of those.

[The information follows:]

Electric Generating Facilities

The total generating capacity of electric utilities plus nonutilities in the United States grew from 727,687 megawatts in 1990 to 787,900 megawatts by 1999. About 90 percent of the new capacity added during that time uses natural gas. For 1999, Table 1 provides data on electricity generation by State and fuel type. For 1999, Table 2 provides data on electricity generating capacity by State and fuel type. As the 1990 data include information that is confidential, they will be provided to Congress separately.

[GRAPHIC] [TIFF OMITTED] T3750A.020

[GRAPHIC] [TIFF OMITTED] T3750A.021

[GRAPHIC] [TIFF OMITTED] T3750A.022

[GRAPHIC] [TIFF OMITTED] T3750A.023

Mr. Doolittle. And I guess finally, just to observe while you have talked about the difficulty with some of these long processes, I did hear you mention we need to do more about building more transmission lines. But I understand it is extraordinarily difficult to locate transmission lines because of all of these vague and broad Federal laws that we have set up that make it so difficult to do anything anymore. And in that, I will just mention that early on in your meeting with us this morning, I had to meet with my Sacramento Metropolitan Chamber of Commerce where I was informed, in their opinion, we are on a path in California to having all inhabitable land designated as critical habitat. That will mean that we will not be able to make a single land use decision without a Section 7 consultation. And that will mean that we will not be able to site any power plants, even if we overcome all of our own stupidities inside the State and manage to, you know, be serious about this, because then we will have to deal with the blessing of the Federal bureaucrat either in the Fish and Wildlife Service, the EPA, or the National Marine Fisheries.

And I just wanted to, as a Cabinet member of the Bush administration over Energy, draw this to your attention and ask for some help and get some relief. This thing is totally out of control. And, you know, you may just laugh, it is just us in California, but guess what, folks? What starts in California spreads. It is like cancer. It goes to the rest.

Thank you.

Mr. Callahan. I am not going to comment on that at all. [Laughter.]

Mr. Visclosky.

Mr. Visclosky. I might comment that New Jersey, Alabama, and Indiana are looking better all the time.

I would just briefly add my voice, as far as energy policy--and we are into budgets here, but I do think moderation in all things is good. We have become very nonsensical as far as our policy. So I would hope that there is a broad, inclusive approach.

INFRASTRUCTURE IMPROVEMENTS ACROSS THE DEPARTMENT

Secondly, Mr. Secretary, obviously we are charged today and this year with looking at next year's budget, but I am very concerned, looking at the longer term and anticipating you are going to be with us for a long period of time, that the NNSA is probably going to be coming up asking or indicating that they have a $5 billion backlog of maintenance requirements. I do appreciate your attitude towards environmental cleanup and wanting to speed this process up, but obviously that will also necessitate at some point in time some expenditure of large sums of money. And the administration is betting, at least in 2004, that $1.2 billion is going to become available through the Arctic National Wildlife Reserve, and maybe it will and maybe it won't. But I would hope that the administration, not necessarily your office, is realistic as they look in these out-years.

DEPARTMENT LABORATORIES SHARING RESOURCES

Briefly, if I could just ask two questions in whatever time the Chair would yield you, again, the NNSA will indicate that they have a $5 billion backlog for infrastructure. I am wondering if on the civilian side the Department has done a similar assessment. And, secondly, a March 2001 General Accounting report indicated that in 1997, DOE was using only about 59 percent of its available super-computing capacity and that they were missing opportunities to share resources. I am wondering if DOE labs have a policy for sharing resources rather than each laboratory duplicating and reinventing the wheel.

INFRASTRUCTURE: COMPLEX-WIDE

Secretary Abraham. As to the first issue, we are in the process of trying to make a complex-wide infrastructure evaluation. Part of General Gordon's NNSA evaluation will be, I think, a function of the nuclear force reviews that we are participating in with the Department of Defense, because we really first have to determine what refurbishment, what development, what other sorts of needs we will have. But I know that if Congressman Wamp was here or others who have facilities that are related to the defense responsibilities of the complex, if he were present or others who are from those areas were present, they would note that, in fact, we have deterioration in buildings throughout this complex. We are trying in this budget to address some of that, but certainly there is more. Senator Domenici I know has talked about this at some length in a variety of contexts in recent years. And we are waiting to first determine, you know, what the total responsibilities of the complex are going to be before we decide what the priorities ought to be and try to cost those out. Although obviously General Gordon has made an initial assessment, which was done in a vacuum, not including in that consideration the priorities that would be set by our nuclear force review.

Our goal is to have a similar kind of assessment on the civilian side. Obviously a lot of these facilities have shared responsibilities, so that has an overlapping kind of impact.

COMPUTER CAPABILITIES AT THE LABORATORIES

With respect to the computer capabilities that you referenced, we actually had a little bit of a difference about this in the context of the putting together of the budget, because OMB had identified the same report circa 1997 and asked whether or not we could not reduce some of our costs in this area.

What our investigation revealed was that, in fact, while 59 percent was roughly the percentage perhaps at that point that was being used for actual applications, in fact, the rest of the capacity of the computers was being used in no small measure to develop the codes and the software that would drive the process of the expressly applied computer system. That is my understanding of it.

So when we went back and forth on this issue in the preparation of this budget, it was, I think, agreed upon that, in fact, the capacity is being fully used, and we further discovered that, in fact, a fair amount of sharing goes on on a regular basis as between the needs of the various labs. This was, I guess, exemplified, for example, last year when the Cerro Grande fire took place at Los Alamos, and my understanding is that some of the facilities at Sandia, the computer services there were made available for the use of the technicians at Los Alamos.

Whether or not we can expand that kind of sharing or even if there is room to do so is something we will look into.

Mr. Visclosky. Thank you, Mr. Chairman.

CONCLUSION

Mr. Callahan. Mr. Secretary, we thank you for appearing before our committee today and encourage you to do everything you can, which I know you are going to, to make certain that your entire organization is made whole as soon as possible. You are blessed to have talented people like Mike Telson to give you some historical input into your decisions of the day, but naturally, it is important to all of us that you get your entire group assembled so we can move forward.

But we look forward to working with you and to establish a policy and to provide to you the necessary resources to have an effective policy that is workable.

Secretary Abraham. I appreciate that and look forward to working with all the members of the committee on these issues in the future. Thank you.

Mr. Callahan. Thank you.

[The questions and answers for the record follow:]

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Thursday, May 10, 2001.

DEPARTMENT OF ENERGY

WITNESSES

DR. JAMES DECKER, ACTING DIRECTOR, OFFICE OF SCIENCE
DR. ROBERT K. DIXON, DEPUTY ASSISTANT SECRETARY, OFFICE OF POWER TECHNOLOGIES, OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
WILLIAM D. MAGWOOD, IV, DIRECTOR, OFFICE OF NUCLEAR ENERGY, SCIENCE AND TECHNOLOGY

Mr. Callahan. I asked the staff to call and see if there was going to be a journal vote. I would hate to get you guys halfway into the opening statement and all those bells start ringing for that total waste of time. But in any event, I do not guess that they found out yet, so we will go ahead and proceed.

We have today Dr. James Decker, the Acting Director of the Office of Science; Dr. Robert K. Dixon, the Deputy Assistant Secretary for Power Technologies; and William Magwood, the Director of the Office of Nuclear Energy, Science and Technology. Gentlemen, we welcome you to this committee, and look forward to working with you for the rest of the process of the appropriations.

Some of you all have requested some pretty healthy reductions. Generally, that is not hard to facilitate your request, but I do think we need to question some of your priorities in your request. I know technically you did not write the budget request, but I am sure that you had some input or some discussions with OMB, anyway.

But, in any event, good morning. Welcome to the Committee, and we will start in any order that you wish. Dr. Decker, maybe we will just start in the center.

SCIENCE FY 2002 BUDGET REQUEST

Dr. Decker. Thank you, Mr. Chairman.

Mr. Chairman and members of the subcommittee, I certainly appreciate having the opportunity to testify before you today on the Fiscal Year 2002 budget request for the Office of Science. Before I begin, let me thank you, Mr. Chairman and members, for the Subcommittee's strong support for our research programs in past years.

I have submitted written testimony describing our $3.16 billion request supporting the basic research that underpins the science, energy, environment, and national security missions of the Department of Energy. The Office of Science is the largest source of Federal support for fundamental research in the physical sciences, which includes physics, chemistry, and materials sciences. In addition, my office plays a key role in the life sciences, environmental research, and advanced computation and mathematics.

Our research is conducted by scientists in the Department of Energy's national laboratories and at more than 250 universities located in virtually every State. In funding this research, we develop the new scientific knowledge that helps support both the DOE missions and the Nation's economy of the future, as well as helping to train the next generation of researchers.

The Office of Science also plays an essential role in the Nation's scientific infrastructure by constructing and operating major scientific facilities such as accelerators, synchrotron light sources, and neutron sources. This year these facilities will serve more than 16,000 researchers from academia, industry, and Federal laboratories. These facilities are essential to progress in many scientific disciplines.

The past year has been a very productive one for the Office of Science. A working draft of the human genome was completed, a major milestone in the Human Genome Project which the Office of Science initiated in 1986. We developed many of the underlying technologies used by all of the institutions involved in the sequencing process, as well as sequencing of three of the human chromosomes.

In High Energy and Nuclear Physics, experiments both supported and challenged established theory. Fermilab observed the Tau neutrino, the last of the leptons predicted by our accepted theory, the so-called Standard Model; while another experiment, called the g-2 experiment, at Brookhaven generated a new challenge to the Standard Model, as did strong evidence for neutrinos having mass.

At the same time, the B Factory at the Stanford Linear Accelerator Center has been gathering evidence of Charge-Parity violation, with implications for understanding why matter dominated over antimatter in the universe. And early results from the Relativistic Heavy Ion Collider indicate the presence of a predicted state of matter of the quark-gluon plasma that existed shortly after the ``Big Bang.''

SPALLATION NEUTRON SOURCE

Construction of the Spallation Neutron Source at the Oak Ridge National Laboratory is approximately 20 percent complete, and projected within budget and on schedule for completion in 2006. The Spallation Neutron Source will be the world's most powerful pulsed neutron source, producing six to ten times greater neutron flux than any existing source. It will provide a critical research capability in a wide range of areas, including materials research, structural biology, and advanced drug design.

Our researchers have also made substantial progress in many other areas, such as understanding and controlling energy losses from magnetically confined plasmas; developing techniques for bonding wear-resistant ceramic surfaces to metals, a technique with great promise for improved artificial knees and hips, as well as energy technology applications requiring high levels of heat resistance; and also investigating the effects of Ritalin on the brain through positron emission tomography studies.

The President's budget request for Fiscal Year 2002 will fully fund the Spallation Neutron Source construction; continue operations of our existing large scientific user facilities; support development of the next generation of high performance computing and communications tools for science; continue research in support of DOE missions; and support our stewardship of those areas of science for which we are the predominant supporter, such as high-energy physics, nuclear physics, nuclear medicine, catalysis, and heavy element chemistry, to name a few.

In my remaining time, I would like to briefly focus on three of the important areas of our budget request: ``Genomes to Life''; physics, for both the Standard Model and beyond; and nanoscale science. In each area we are building on knowledge and capabilities that have been created through sustained investments in the Office of Science Programs.

GENOMES TO LIFE

The proposed ``Genomes to Life'' program is aimed at determining how a single cell and consortia of cells function. The single cell is an amazing, complex chemical factory. With our ability to sequence the genome of any living thing today, we can determine an instruction set for making the parts of the cell. However, we do not know what the parts are and how they function together.

We also do not have an understanding of how a consortia of cells, such as complexes of different microbes, work together. Eventually we want to understand the behavior of more complex cellular organisms, including people. We do know that these systems are so complex that the only way that we will obtain a predictive capability is through computational modeling.

To successfully tackle this problem, interdisciplinary teams will have to be formed, and we will need many of the tools that we have developed over the years, including our terascale computers, our synchrotron light sources, our neutron sources, and our DNA sequencing capabilities. Our initial focus is on microbes that are relevant to DOE missions, including energy production, carbon sequestration, and environmental cleanup. We also anticipate this effort will contribute to a better understanding of health effects of various environmental toxins, and will allow us to better understand the impacts of low doses of radiation.

HIGH ENERGY AND NUCLEAR PHYSICS

In high energy and nuclear physics, the Department of

Energy laboratories are now the site of the most advanced experimental facilities in the world. The 2002 budget proposes a program to allow the Tevatron at Fermilab to explore the energy range where physicists now expect to observe the Higgs boson, believed to be the source for the fundamental constituents of matter.

This proposed budget will also allow the B Factory to dramatically speed up its program of research into the asymmetry that led to the dominance of matter over antimatter in the universe. At Brookhaven, the Relativistic Heavy Ion Collider will examine the qualities of a manmade quark-gluon plasma, addressing the question of why quarks are so strongly confined inside protons and neutrons, and shedding light on the early evolution of the universe.

We are also exploring another scientific frontier, science at the nanoscale, where the physics of materials is governed by the interaction of individual atoms and molecules and is qualitatively different than at larger scales. The promise for the future is immense.

We are now entering a stage of research where structures can be designed, atom-by-atom, so that the desired characteristics and chemical reactivity can be controlled. In the future, we should be able to design and synthesize new alloys, ceramics, chemical catalysts, and other materials tailored for specific tasks, leading to significant improvements in solar energy conversion, more energy-efficient lighting, and stronger, lighter materials to improve efficiency in transportation.

The budget request for the Office of Science balances support for our existing programs and facilities with new investments such as ``Genomes to Life'' and new tools such as the Spallation Neutron Source. This provides a strong basis for scientific progress in all the disciplines that we support, while capitalizing on exciting new opportunities and new areas of research.

Mr. Chairman, that concludes my oral remarks, and I would be pleased to answer any questions.

[The prepared statement of Dr. Decker follows:]

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Mr. Callahan. Thank you, Dr. Decker. Now that I thoroughly understand your mission, we will move on. Dr. Dixon?

FY 2002 BUDGET REQUEST

Dr. Dixon. Mr. Chairman, I have offered written testimony for the record. I would like to move through some graphics which are in front of you. There is a packet for each of you.

Again, Mr. Chairman, good morning, and thank you for the opportunity to present our 2002 budget request for energy and water development programs and renewable energy resources. I am Dr. Robert K. Dixon, Deputy Assistant Secretary in the Office of Energy Efficiency and Renewable Energy. Our Acting Director, Dr. Abraham Haspel, is recovering from a serious ailment and sends his apologies for not being here today.

The energy investments proposed in our 2002 budget request address today's energy problems and provide the technology base for the next generation of energy needs. These investments can reduce our dependence on imported energy sources, address the critical needs for energy supplies, and upgrade the energy infrastructure in the electric power sector.

The 2002 budget request totals almost $277 million. This figure includes an amendment to our original budget request for more than $39 million. In an effort to control spending, it is always necessary to identify priorities and focus on the most critical activities.

Because of their strategic importance, the Secretary has identified five priority programs that will be funded at or near Fiscal Year 2001 levels. These programs included Bioenergy, Hydrogen, Hydropower, Electric Energy Systems, and the Renewable Energy Production Incentive.

While we have adjusted the requests for other programs, the requested funding levels will still maintain core competencies and will allow continued progress towards our national technology goals. Mr. Chairman, I want to assure you that the solar, wind, and geothermal programs remain a vital part of our portfolio and essential to implementing a robust national energy policy.

NATIONAL ENERGY CRISIS

Mr. Chairman, clearly we are facing severe national energy problems. The President has identified the electricity crunch as a national energy crisis. If the worst case electricity shortage scenario occurs, up to two-thirds of the 125 million American electricity users could be affected. Thus, we have developed an alternative energy R&D portfolio which is responsive to these national needs.

Mr. Chairman, working together, we have a window of opportunity to address national energy problems. The new National Energy Plan which is being developed under the leadership of Vice President Cheney will be released next week. The report will contain important guidance for the future directions and priorities of our programs.

The Hydrogen Reauthorization Bill is before Congress. It lays the foundation for revitalization of the Nation's energy infrastructure.

Hydropower, a vital resource today, could be a significantly less important part of the Nation's energy portfolio in the future if we do not handle the relicensing processes more carefully.

Creation of new rules of the game for the utility markets and regulations is proving to be an extraordinarily complex process, as we have seen with the disappointments in California but the successes in Texas. Our power generation, transmission, and distribution infrastructure needs to be modernized. We need power supplies and an up-to-date infrastructure to keep the lights on and the internet humming.

RENEWABLE R&D PRIORITIES

Mr. Chairman, this is truly a decade of decision for alternative R&D activities. Mr. Chairman, this is our portfolio of technologies and programs. We have three major areas of activity: renewable energy; distributed energy resources; and reliability and power quality. I want to highlight two of the Secretary's priorities in FY 2002, bioenergy and distributed energy resources.

Mr. Chairman, our proposed bioenergy activities focus on three primary elements: biomass for electric power; biomass for transportation fuels; and biomass for industrial feedstocks and products. We are requesting almost $82 million for collaborative R&D, and we are working hard to align our programs with the guidance under the Biomass R&D Act of 2000. We are also working closely with our industrial and academic partners and with other Federal agencies, such as the U.S. Department of Agriculture.

DISTRIBUTED ENERGY RESOURCES

Mr. Chairman, our R&D portfolio includes priorities for distributed energy resources in 2002. Distributed energy is an important concept in restructured utility markets. It focuses on energy technologies that can be installed on site and provide clean, affordable, reliable energy supplies directly to customers. Natural gas is an important fuel for distributed energy systems today.

The Nation needs a distributed energy system that can operate efficiently and safely in concert with traditional power systems. It needs to be integrated, optimized, seamless, and able to incorporate emerging technologies. Hydrogen energy, which is plentiful and clean, is compatible with existing distributed energy devices such as fuel cells, engines, and combustion turbines.

Distributed energy resources provide new supplies and address the Nation's aging transmission and distribution infrastructure. Approximately 70 percent of our transmission lines, transformer banks, and circuit breakers are over 25 years old, and they need to be upgraded or they need to be replaced. Our program in electric energy systems includes R&D efforts for high-temperature superconducting materials for cables, motors, and transformers. These materials have near zero line losses. Mr. Chairman, our distributed energy resources portfolio is responsive to our Nation's energy needs.

Finally, Mr. Chairman, I would like to again highlight our budget request. We are requesting almost $277 million, which includes a supplement for $39 million which will be submitted shortly. And again, we have five areas of priority: bioenergy, hydrogen, hydropower, electric energy systems, and the Renewable Energy Production Incentive.

Thank you for the opportunity to appear before you today. Thank you for your support in the past, and I look forward to responding to your questions.

[The prepared statement of Dr. Dixon follows:]

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NUCLEAR ENERGY FY 2002 BUDGET REQUEST

Mr. Callahan. Mr. Magwood?

Mr. Magwood. Thank you, Mr. Chairman. I am Bill Magwood. I am Director of the Office of Nuclear Energy, Science and Technology. I am pleased to appear before you today to discuss our Fiscal Year 2002 budget request. I would like to welcome you to the energy and water fray. You have come at an opportune time, as have the other new members of the committee. Welcome to all of you.

When we met with this subcommittee last year, we said that the United States was on the edge of a turnaround in the prospects for nuclear energy. At that time, nuclear power plants were setting new records in the United States for producing inexpensive and reliable electric power. The utility industry was moving forward with relicensing its nuclear power plants, and utilities were beginning--for the first time in many years--to talk about the possibility of building new plants in the United States.

This year evidence of that turnaround is even greater. Nuclear power has set even higher generation records than last year. Nearly all U.S. nuclear power plants now are expected to receive NRC license renewals. The utilities are now actively engaged in developing the business case for specific nuclear power plant projects. I would expect that next year we will be able to report even greater progress.

It is difficult to measure the degree to which Government encouragement fosters this renewed interest. Clearly, industry makes its decisions based on business cases, on economics and strategic factors, but you cannot underestimate the impact of having the Vice President of the United States make the case for building new nuclear power plants in this country.

You also cannot underestimate the impact of renewed Federal funding for nuclear research and development. Since our R&D budget hit essentially zero in 1998, the Department has received slightly more resources each succeeding year, and we have spent those resources to support both the near-term and long-term interests of the United States for increased power production. While our nuclear R&D program is small in comparison to other programs, for example, only about one-tenth the size of the renewables program, its impact has been huge.

NUCLEAR ENERGY RESEARCH INITIATIVE

At the core of our research activity is the Nuclear Energy Research Initiative, NERI. This is an investigator-initiated, peer-reviewed research program designed to advance revolutionary nuclear power technologies. Initiated in 1999, this program signaled the return of the United States to nuclear power R&D, a return that reflected lessons learned and a new appreciation for applying outside expertise to focus the Federal research agenda.

Today, there are more than 50 research projects underway, many representing significant cooperation and collaboration among the Nation's universities, laboratories, and the private sector. Next week the Department will award 13 new projects involving eight universities, eight national laboratories, eight private sector organizations, and collaborations with six international organizations.

GENERATION IV NUCLEAR POWER SYSTEMS

A major focus of the NERI program this fiscal year and next, and an area of growing interest in the U.S. and internationally, is the Generation IV nuclear power systems. The Generation IV nuclear power systems are those that will be competitive with all other energy options and will open the use of safe, proliferation resistant nuclear power to more people throughout the world. We are currently developing a Generation IV technology roadmap to evaluate a variety of advanced nuclear energy systems concepts and to define the needed research activities for the most promising concepts.

This roadmap has become a large international project involving nearly 150 experts from 10 countries working on many technical working groups. We have established a new international collective known as the Generation IV International Forum, or GIF, through which the United States can leverage its expenditures in research and work with other nuclear experienced nations to set the goals, establish the programs, and collaborate in the research that will lead to next generation nuclear power systems. This week we are hosting a large meeting in Chicago, bringing all these U.S. and foreign scientists together for the first time to coordinate their activities.

The Gen IV goals set very aggressive targets for future technologies, such as limiting the need for off-site emergency planning, and assuring the economy and proliferation resistance of future nuclear technologies. Now international teams, most based in the U.S. and a few based overseas, but all under the guidance of our Nuclear Energy Research Advisory Committee, will evaluate a number of concepts against these Gen IV goals and agree upon the technology concepts around which the entire international community will rally. The roadmap should be completed by the end of next year, and we have requested $4.5 million in 2002 to complete this work.

ADVANCED ACCELERATOR APPLICATIONS PROGRAM

We are also making significant progress in the Advanced Accelerator Applications program, the AAA program, defining the parameters for a potential project to build the necessary facilities and establishing the research to explore the transformation of nuclear wastes into less toxic forms of less quantity than untreated spent nuclear fuel. International collaboration is a fundamental underpinning of this initiative, and very shortly the Department will sign an agreement with

France to share the cost of performing a series of important experiments over the next year.

The French are very interested in discussing a joint activity with the United States to build an accelerator-driven test facility in the U.S. Should such a project proceed, the support of the French, the Swiss, and other countries will be essential, as the U.S. is a relative newcomer to this area of technology and other countries have made significant progress.

For this initiative, as well as most other aspects of nuclear R&D, the FY 2002 budget reflects a need to pause and reflect on the direction of our research. With the entry of a new administration, it is appropriate to assess the energy needs of the country and consider the DOE's activities in that light.

As you know, the Vice President is leading a task force to review these issues. Once these priorities are clearly identified, the Department will be in a better position to recommend a future direction for its research and request appropriate funding for its activities.

MEDICAL ISOTOPES

Another major area of focus for our office is medical isotopes. Medical isotopes are a staple of today's advanced medical infrastructure. Accurate nuclear medicine diagnoses enable physicians and patients to precisely target therapies, thus avoiding surgery in many cases.

Today there are groundbreaking clinical trials underway at Memorial Sloan Kettering Cancer Institute in New York, demonstrating that alpha-particle-emitting isotopes produced at the Oak Ridge National Laboratory may be extremely effective in treating leukemia and other serious illnesses. These isotopes work well when targeted to cancers because they provide high-intensity radiation in very short areas.

ADVANCED NUCLEAR MEDICINE INITIATIVE

Our Advanced Nuclear Medicine Initiative, started last year, supports research on medical applications of isotopes in training in nuclear medicine technologies. Nine research projects are underway by universities, hospitals, and national labs, and five education grants have been provided to universities across the country.

ADVANCED RADIOISOTOPE POWER SYSTEMS PROGRAM

The Department also has an essential role in enabling the United States to explore space. Our Advanced Radioisotope Power Systems program provides critical support to the Nation's efforts to better understand the universe in which we live. The Department provides power and heat sources to NASA for spacecraft, enabling missions to deep space. In 2002, the Department is proposing to provide $29 million for this activity, the absolute minimum necessary to sustain our unique infrastructure and allow us to continue to support NASA and also our national security customers.

NUCLEAR SCIENCE AND ENGINEERING PROGRAMS

Finally, I would like to inform you of an urgent matter that we are now facing. The Nation's universities, which have supported nuclear science and engineering programs and research reactors for many years, are facing intense pressure. A growing number of universities today are contemplating closure of the research reactors. These reactors, such as at Cornell and MIT and University of Michigan, are a vital part of the Nation's nuclear science and technology infrastructure.

Many of us are concerned that these universities may close many of the reactors this year. In response to this, our Nuclear Energy Resource Advisory Committee formed a special task force to investigate the issue and make recommendations. That task force has reported back, and last month recommended that the Department provide a near-term influx of funds to keep these three facilities at MIT, Cornell, University of Michigan, in operation, and set up a longer term structure to assure the continued operation of university research reactors in the U.S. We are now looking at those recommendations, and we will react to them very soon.

With that, I will end my oral remarks and will be pleased to answer any questions you may have.

[The prepared statement of Mr. Magwood follows:]

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NUCLEAR ENERGY R&D FUNDING

Mr. Callahan. Thank you, Mr. Magwood. Since we let you testify last, we will begin questioning you first. Certainly your area of jurisdiction and responsibility lies in an area that all of America, I think, is looking at at this time in our history, and that is the expansion of our nuclear energy capacity here in the United States.

I notice, and I assume you support, the President's request when he submitted this budget, but I noted the President has cut you about 8 percent at a time when nuclear energy is on the tip of the tongue of everyone talking about energy policy, when it is the obvious way to expand our capabilities of producing our own energy without the continued reliance upon Middle East oil.

I just wonder why you and the Administration would submit to the Congress a request for reduction when it is apparent that--maybe you know something we do not know--but it seems apparent to me that that is the direction we must move towards. And so it is confusing to us to hear indications that next week Vice President Cheney is going to come out and say that this is the way we must proceed, and at the same time you say, ``Give us less money to make sure we are doing it right.'' Do you support the 8 percent decrease?

Mr. Magwood. Actually, Mr. Chairman, the decrease in nuclear energy R&D funding is significantly larger than 8 percent. Most of our budget is composed of infrastructure requirements, so the 8 percent actually reflects a huge decrease in nuclear energy R&D funding levels that we have requested.

I do support the budget we have requested, for the following reason: It is appropriate for the new Administration to look at the activities that are currently being conducted by the Department and other Federal agencies I believe that once the new Administration has an opportunity to assess the progress we have made over the last few years and look at the programs that are in place, we will see more support in future budgets.

I think it makes sense to freeze the new activities. We have many new initiatives that were about to be launched, and it makes sense to pause and take a look at those initiatives and make sure we are moving in the right direction.

For example, one of the bigger cuts in our budget reflects asking for no money for the Advanced Accelerator Applications program which was funded at $34 million last year. This year we have asked for zero. And I think that before we make a commitment to go forward with a program that could eventually cost $1 billion or more, it makes sense to stop now, take a look, make a policy judgment, and then move forward.

We are waiting to see what the Vice President's report says next week, and if there is support for our activities, then I expect that there will be ultimately greater support for nuclear energy R&D funding.

Mr. Callahan. Well, I think that we are where we are today simply because of research and scientific testing of the past, yet you are requesting a 48 percent reduction in nuclear energy research, and telling us that you are facing a crisis in many of the universities that will be preparing us for the future and even for the current situation, giving us support to make certain that when we move in the nuclear power direction, that we are doing the right thing or maybe a more cost-effective thing. Why would you request a reduction of 48 percent and yet express concern about closure of some of these educational facilities?

Mr. Magwood. Once again, all I can say is that I believe that what we have done is to continue supporting the research, as well as the commitments that we have in place, but we have not started new initiatives. We have not started the Advanced Accelerator Applications program. We don't plan in 2002 to award new Nuclear Energy Research Initiative (NERI) projects. We don't plan to expand immediately into a new, larger university program.

I think it makes sense for the new leadership in the Department to understand the programs before making commitments for the future. As I said, I personally believe that once they have had an opportunity to look at these programs and understand the impact that they can have, that we will see more support in the future.

Mr. Callahan. Mr. Magwood, then you would not be tremendously upset at this Congress if we increased your appropriation for these things, would you? I mean, we do not want to upset you.

Mr. Magwood. Well, Mr. Chairman, Congress has increased our budget every year for the last three years over the request, and I have not thrown a tantrum yet. [Laughter.]

Mr. Callahan. Dr. Dixon, I feel like I can trust you a little bit more because you do have some credentials at Auburn University in Alabama.

Dr. Dixon. Yes, sir.

HYDROGEN R&D

Mr. Callahan. But we had some interesting conversations a couple of weeks ago with a European automobile manufacturer president, indicating that they were coming out with a prototype in 2004 of an automobile that will run on water by separating hydrogen from the oxygen. Where are we on that? Are we that close to being able to separate and burn the hydrogen to create energy? Are we that close?

Dr. Dixon. Well, Mr. Chairman, I am not fully familiar with the example that you cited this morning, but let me try to update you on where we are at with the hydrogen R&D program at the Department, because we have a robust hydrogen R&D program. It has been in operation for about five years, and there are a number of R&D activities, including efforts to look at the catalysis of water.

There have been significant breakthroughs using chemical means or biological means to break water into hydrogen and oxygen, and there have been significant advancements. Whether this technology is ready to move in the marketplace is open to some debate. There are those who are pressing ahead with the technologies; there are those who are taking a more circumspect view of these breakthroughs and continue to test in the laboratory, to test in the field.

We look at the hydrogen program as an area of bright promise at the Department of Energy. We are looking forward to working with Congress in the reauthorization of the Hydrogen Act, and look forward to continue to make R&D investments to bring a hydrogen-based economy to the American people, whether it is applications in automobiles or in homes.

Mr. Callahan. Well, in discussing this with the automobile manufacturers, the president of the automobile company said the primary problem was the constant movement of the vehicle, the turns. Therefore, you would assume from that, that if that is the primary problem, that home usage, if they develop it to the point where you could use it to propel an automobile, that home usage in a stable position would be the obvious way for us to go, to burn water to create electricity in a home. Are we anywhere close to that, or is that some science-based theory that may or may not work, or will it work?

Dr. Dixon. Mr. Chairman, we have seen dramatic breakthroughs in research and development in the hydrogen field in recent years. We have seen significant improvements in the efficiency of fuel cell systems. Hydrogen is an opportunity for America because there are a number of ways to make the hydrogen molecule, and it is a very flexible molecule, and there are a number of ways that it can be used in our homes and businesses.

The difficulty, the R&D barrier as I see it today, is in the area of safety and storage of hydrogen, and we continue to make investments in this arena. These are priority investments in our R&D portfolio and in our 2002 request. I think we need to work a little harder, a little bit longer, on how we carefully and safely bring hydrogen into homes and businesses. As you know, there are questions about hydrogen safety.

We made great strides in our work, in working with the States on codes and regulations. Are we ready to move into the home? Yes, there are a few products. We know that there are products coming on the market this year. For instance, Coleman is coming out with a little fuel cell that you can take out on your camping trip.

So, yes, we are moving forward. Are we ready to go commercial on a large scale? We are probably a few years away yet, but very promising technology. I understand some of the vendors are ready to bring products on the market in the next year or two for use in commercial applications. I do not think it will be long. If those applications prove fruitful and the testing continues to show positive results, then application of those technologies in homes cannot be too far away.

Mr. Callahan. Now, I am excited about it but I do not want to get too excited about that possibility of burning water to propel your car in lieu of gas, because if I go back to Alabama and tell them that we are on the brink of this, it may come out in two years that, yes, it will work but you have got to burn Perrier water, and we do not want to get into that. [Laughter.]

But I am excited about that, and I hope that we can make some rapid advancements.

My time is up. We have a vote, Pete. Do you want to go ahead and----

Mr. Visclosky. Shall I go vote and come back, Mr. Chairman?

Mr. Callahan. Do whatever you want to do. Do you want to go vote and come back?

Mr. Visclosky. Yes, that would be preferable, Mr. Chairman.

Mr. Callahan. All right. If you will excuse us, we will go and then come back.

[Recess.]

Mr. Callahan. Mr. Visclosky?

Mr. Visclosky. Thank you, Mr. Chairman.

UNIVERSITY REACTOR SUPPORT

Mr. Magwood, if I could start with you, at the end of your testimony, and the chairman talked about nuclear research as well, you talked about the university programs. And in your written statement you had indicated that the task force has been conducting a review, but it is my understanding that it has now reached a conclusion and made a recommendation.

Let me just stay with that question. I understand that it has made a recommendation that at least $750,000 be provided in this coming fiscal year, I assume it is the next fiscal year, to address the needs of the three universities you mentioned, and that would be University of Michigan, MIT, and Cornell. Otherwise, it is my understanding their reactors would likely be decommissioned and stop operating.

Mr. Magwood. It is actually this Fiscal Year they have made the recommendation to provide that money.

Mr. Visclosky. Oh, so the $750,000 would be for 2001?

Mr. Magwood. Yes.

Mr. Visclosky. Okay. Is that an indication that there would be a problem in 2002 as well, then, for funding for university reactors?

Mr. Magwood. I have talked with Mr. Long about that. Mr. Long is a former Executive Vice President from GPU Nuclear in Pennsylvania, and also was formerly on the staff of the University of New Mexico. As a member of the Nuclear Energy Research Advisory Committee, he led a three-person, what we called the tribunal, to go out to the universities and understand the situation, particularly at the three universities that thought they might shut their reactors down this year. Those three, as I mentioned, are Cornell, MIT, and University of Michigan.

What they have recommended is a two-step process. The first step would be to provide an influx of money, $750,000 was what they recommended, to those three institutions, to give them some support from the government while we formulated a longer term strategy. The longer term strategy they have recommended would actually require more money in FY 2003.

What they have suggested is that the Department support, I believe, about nine university reactors as national centers. Five would be for research and four would be for training, and the Department would provide extra resources to those facilities.

Mr. Visclosky. There are more reactors than that now at universities.

Mr. Magwood. There are more reactors than that now, but NERAC believes that there is justification for nine reactors to receive increased Federal support. The other facilities would receive the kind of support we are currently providing for fuel and upgrades of equipment, but these nine would receive substantially more funding from Government under this proposal. This would assure that they stay in operation, because of the importance of those particular facilities to the Nation, and there would be a peer-reviewed expert process to identify those nine facilities.

Mr. Visclosky. It would not necessarily necessitate the closure of those that are not going to receive the additional plus-ups?

Mr. Magwood. It would not.

Mr. Visclosky. None of those are Notre Dame, by chance, are they?

Mr. Magwood. I am sorry?

Mr. Visclosky. None of them are Notre Dame, are they?

Mr. Magwood. Actually there is one at Purdue. [Laughter.]

Mr. Visclosky. I would express my personal concern, and I assume at some point we will see something from the department as far as reprogramming or follow-up on the recommendations?

Mr. Magwood. I am discussing the options with the Secretary's staff.

Mr. Visclosky. I, for one, am very concerned about that, and also the implications as far as education.

I am very pleased, I must tell you, that in 2001 you will now fund three minority-majority partnerships, and I am very, very pleased about that initiative, and it is my understanding that you have enough money in your budget for 2002 to expand that partnership to six the next fiscal year.

Mr. Magwood. I believe that is correct, yes.

Mr. Visclosky. And there is enough money in your budget to continue that particular initiative?

Mr. Magwood. That is our plan at this time.

Mr. Visclosky. If I could ask, just out of curiosity, in your testimony you also talked about 50 scholarships and 24 fellowships for 2001 and 2002. Is that an increase over what was provided in 2000, do you know? Has that been a static number?

Mr. Magwood. That is pretty much a static number. At one point we had a few more than that, but the actual amount of dollars that we allocate to the fellowships and scholarships is about the same. The number goes up or down somewhat every year depending on which university actually is hosting that student or students. There are some universities, as you know, that cost significantly more to send a graduate student to than others, and that actually has a big impact on how many fellowships and scholarships in total we can award. But the actual dollar level has been constant for the last few years.

FAST FLUX TEST FACILITY

Mr. Visclosky. You now have a 90-day suspension on the Fast Flux Test Facility, as I understand it, and there is going to be another. My sense is, that is not the first review or even the second review. What new information do you believe is going to be provided by another review relative to the operation of the Fast Flux? Or whoever would want to respond to that.

Mr. Magwood. I turn to Dr. Decker.

Mr. Visclosky. You want Dr. Decker to answer?

Mr. Magwood. Dr. Decker has asked that I continue to answer the question. [Laughter.]

Mr. Visclosky. I am on a roll.

Mr. Magwood. In December, Secretary Richardson decided that we should provide, as part of the final programmatic environmental impact statement, a preferred alternative of shutting down the FFTF, and at that time there were several things that we did not know that we know now.

One, for example, is that we did not know that the pace of the use of medical isotopes in the United States has actually increased faster than our initial projections. We had projected an increase of about, as I recall, 8 to 16 percent increased used for therapeutic isotopes each year for the next 20 years. And I am told by experts outside the Department that the pace is actually significantly larger than that. I do not know what the number is, but they tell me it is significantly larger. There is a new independent consultant report that is available.

Mr. Visclosky. So there are some changes, and when do you anticipate that review----

Mr. Magwood. It is a 90-day review. I may have to defer to Dr. Decker. I do not know if there is an exact target date at this point, but the 90-day clock, my understanding is that it started about a week or so ago.

Mr. Visclosky. In the early fall, then?

Mr. Magwood. Probably by the end of summer.

NUCLEAR ENERGY PROGRAMS

Mr. Visclosky. One last observation I guess I would make is, in one of the written testimonies there was a statement relative to the Nuclear Energy Research Initiative that was reduced significantly in the 2002 request, I believe by almost half. And the statement was that this decision was made in order not to prejudice the decisions of the Cheney task force that is going to be issuing their report.

And if I could kind of follow up, I guess, on the chairman's observations, on the Fast Flux reactor, it was even-funded. On university reactors, and I am concerned about the funding level there, it was even-funded. And I think those types of decisions may give you some flexibility, but where you take a figure for the Nuclear Energy Research Initiative from 34 to 18, when you reduce the Nuclear Energy Optimization Program, you have nuclear energy science and technology reduced by $22 million, I am very concerned about that, very concerned. I would just make that statement for the record, if I could.

Mr. Chairman, with that, I yield back.

Mr. Callahan. Mr. Frelinghuysen?

SCIENCE IN THE NATIONAL ENERGY POLICY

Mr. Frelinghuysen. Thank you, Mr. Chairman. I have a couple of general questions that I guess would go to Dr. Decker.

For somebody in California there is an immediate energy crisis. They are living with it every day. But a lot of what you do and do well, actually all of you gentlemen do well, is in terms of basic research. I know this committee has been supportive of research, and in certain areas I have professed more interest in than others. But sometimes it is difficult to make a case for the long-term investment, given, shall we say, the crisis we appear to be in. And certainly if you come from California, there is one.

I was just wondering, Dr. Decker, since the President is about to roll out his national energy policy, I would assume some portion of it would be devoted to the need for long-term investments, which is really your area of expertise and responsibility. I was wondering if you could, in just a few minutes, if you could make to this lay person a basic case, a best case for why such research should fit in a national comprehensive policy? I can make it as a lay person, but I was just wondering if you could talk about that part of the overall equation. People are looking for quick fixes, but in reality this committee has made some long-term investments which are very important. How do you sort of make that case for the public, that those, these investments need to continue?

Dr. Decker. Sometimes that is not an easy question or an easy case to make. I think that, as you said, when people are looking for short-term fixes, it is hard to make the arguments to make investments in things that may not pay off for 10 years or 20 years.

I think the best case that one can make is to sort of look back at the investments that have been made in the past and see how they have paid off. I mean, our economy that has been so strong certainly has been driven, I think to a large extent, by the investments in long-term research by the Federal Government. And I think that is probably the strongest case one can make, is really a retrospective look at the payoffs of basic research in the past.

Mr. Frelinghuysen. I think, I hope it will be well-articulated in what the President is about to lay out for us. And the second general question is, and maybe I have been listening to Dan Goldin lately, I certainly promote the work of physicists, but he makes the point sometimes on his bully pulpit that there needs to be more work in terms of relationships between biologists and physicists, and interactions between some of our brightest and best. As I look over a lot of the work of the labs here, and I am supportive of that work, do these great, giant intellects in these programs talk to one another?

Dr. Decker. Yes, I think that is truly one of the strengths of especially the Department of Energy's laboratories. The thing that the laboratories really bring to the table, at least one of the things, is their ability to put together interdisciplinary teams to tackle really complex problems.

And that is certainly why I think the Department is well-positioned to take on the new initiative that I described, ``Genomes to Life,'' because it really will require not just biologists but physicists and chemists and computational scientists working together to solve a very complex problem, and it will take our large facilities----

Mr. Frelinghuysen. But direction from above somewhat mandates that. I mean, it is occurring?

Dr. Decker. Yes.

Mr. Frelinghuysen. I mean, everybody has a right to a degree of selfishness in terms of their professional work, and I understand the nature of this business is that people often share their work, with other physicists around the world, and they can sort of see on a day-to-day basis how things are rolling out and progressing. But I just wondered whether, in the scheme of things, biologists are talking to physicists, and whether that is actually occurring.

Dr. Decker. I think certainly that is more and more the case today than it was maybe 15 years ago. I mean, you see more and more the impact of physics and chemistry, the physical sciences, on progress in biology and life sciences.

FUSION ENERGY SCIENCE

Mr. Frelinghuysen. As you know, I am an advocate for fusion. I have worked pretty closely with the Princeton Plasma Physics Lab in New Jersey, which is the only single program national lab devoted to fusion energy science. We are trying to get more money for the program. Some have advocated perhaps a budget of $300 million per year. Do you think that level of funding could be put to good use? And could you comment briefly on the whole issue of the decommissioning of the Tokamak at Princeton?

Dr. Decker. Yes. In fact, let me take the decommissioning question first. Decommissioning is certainly supported in the 2002 budget request. It should be completed by the end of 2002, so we are very, very pleased at the way that has gone. It has gone very much on schedule and on budget.

I am sorry. Now I am trying to remember the other part of your question.

Mr. Frelinghuysen. The additional money.

Dr. Decker. The additional money, yes. I think in all of these research programs, certainly one measure of whether or not they are robust programs or can additional money be used effectively is, are there scientific opportunities? Is there good science to be done that is not currently being funded? And the answer is, I think in the fusion program that is the case.

Mr. Frelinghuysen. So to answer my question, the money could be put to use, good use?

Dr. Decker. Yes, there is good science to be done. Yes.

Mr. Frelinghuysen. Okay. Thank you very much.

Thank you, Mr. Chairman.

Mr. Callahan. Mr. Edwards?

Mr. Edwards. Thank you, Mr. Chairman.

Thank you for the work that you all do. I came to Congress as a young aide working for a fellow that chaired the Science and Technology Committee named ``Tiger'' Teague, back in the '70s, and he certainly made me a believer in the importance of the Federal Government investing in research for payoffs, whether it is 2 or whether it is 20 or 30 years down the line.

I know you are in a difficult situation. This is reminiscent of Army generals coming before congressional committees over the last eight years, saying, ``Yes, we are thrilled with our budget, and we can do everything we need to do with it,'' when we all knew that if they could speak totally openly, without pressure from OMB, they would say, ``Yes, we do have needs and we could spend more money.'' So I do not intend to try to criticize any of you personally.

RENEWABLE ENERGY

But, Dr. Dixon, if I could just play off one of your comments, where you said we are facing a severe national energy crisis, I hope FEMA never takes the approach ``we are facing severe floods, hurricanes, tornadoes, so let us cut our budget by 26 to 50 percent to deal with this crisis.'' I read of such cuts in your own report of budget highlights, let us just go directly to some of these cuts.

While the overall cuts are 26 percent when you say we have an energy crisis, which we all agree with, I read your comments about the geothermal program. The goal would be to help provide heat and electrical power to 5 million homes and businesses by 2015. That budget is cut by 50 percent. So are energy technologies.

``Solar systems increase customer energy choices, can reduce energy price volatility, emit virtually no harmful emissions, and can reduce dependence on foreign fuel supplies.'' That is cut by 86 percent in the concentrating solar power program, 48 percent in photovoltaic energy. Solar building research, cut by 49 percent.

Go down to wind energy, and your budget booklet says that one of the goals of the program includes developing lower wind speed turbines that will expand twenty-fold the viable areas for cost-competitive wind energy production. I look at the budget, a cut of 48 percent.

It just doesn't make sense to be describing our energy situation as a crisis, and then describe the positive benefits of these programs, and then say, you know, while we are studying what works and does not work, let us just take a meat axe approach and cut these programs from 48 to 50 to 86 percent.

NUCLEAR POWER

Mr. Magwood, on nuclear energy, I will just say I am a real believer in nuclear power. I think it is clean. I think it is proven to be safe, and I think it is a great energy source for the future. And yet the message it sends out to young students thinking about being nuclear engineers, at a time you already admit we have a crisis, to be cutting nuclear energy research by a dramatic proportion just I think sends a terrible message.

You know, I am not going to ask you to respond to all that. I think we know what has happened over a series of briefings, the same thing that happens in every administration. OMB tells you some numbers you have got to fit your budget into. You do the best you can with those limited resources. But, honestly, we all know this is not a very effective way to deal with the crisis.

My question to all of you, if you could respond in writing, would be if we don't increase these projected budgets by a cent, how many people at the Department of Energy under your programs will be laid off? And if you can give any other specificity, other than what is already in your budget book, as to for example what types of nuclear research will not be funded as a result of this level of budget proposals, I would appreciate that very much.

And finally, Mr. Magwood, one specific question to you. I met with some folks in the nuclear power industry the other day, and they admitted great concern about the shortage of scientists, nuclear scientists and engineers in the United States. We also have, another part of our responsibility in this subcommittee, have concerns about Russian scientists and nuclear engineers that are not getting paid and could be offered attractive jobs in Libya and Iran, Iraq.

Is there anything we can work together on to try to make it easier for the United States to provide immigration for Russian nuclear scientists and engineers? GE has brought over I think 260 Russian nuclear engineers and scientists. I am sure other companies have done some, but they say it is extremely difficult.

Do you have any specific ideas? Maybe it is dealing with immigration policy. Maybe it is something we can all do together. Anything we could do? I think that is a win-win. It helps our nuclear industry, and it also helps employ people who otherwise might be attracted to go to Libya or Iran or Iraq or North Korea to build nuclear missiles. So any thoughts on that, what we could do together?

Mr. Magwood. I really am not aware of any specific, special issues regarding Russian scientists emigrating to the United States. What I am aware of, is a real interest in the Department and the Administration to look at ways of giving those scientists more beneficial activities to do in Russia.

For example, an activity the Department currently is funding is developing a gas-cooled reactor, using Russian scientists, in cooperation with France and Japan. That initiative has employed, my understanding, a few hundred scientists for the last few years, doing extremely good work for a relatively small amount of money.

That is an example of the sorts of things that can be done. I think that there are very good scientists in Russia. I think they would like to do meaningful work, and I think that with some help they can probably be applied to do some things on some of our activities. It is certainly something we should look at.

Mr. Edwards. Very good. Thank you, Mr. Chairman. Thank you, Mr. Magwood.

Mr. Callahan. Zack, just let me, before you go, let me follow up on Chet's comments.

I do not want to hear from any university or college in this country that the reason you cannot grant them additional research monies or new research monies is because Congress cut your budget. Do not let me hear that from anybody, from any of your staffs, that you are transmitting that message to these universities. Because if you do, then next year we are going to give you the right to say that. So do not say that.

We are going to try to pump up your facilities and your capabilities, but I do not want to hear one member of your staff or any of you tell anybody at any university that the reason we cannot continue your program or the reason we cannot grant you a grant to do your program is because Congress cut your monies. You tell them, ``We went to Congress and we requested a cut.'' Do not let me hear that, or there will be consequences to pay.

Mr. Wamp?

Mr. Wamp. I think I will start by saying, ``Amen, Brother.'' [Laughter.]

SPALLATION NEUTRON SOURCE

Dr. Decker, let me start with the Spallation Neutron Source. You gave us a report that it is 20 percent complete, it is on time, it is on budget, management reviews are positive to date. We all know that a year and a half ago this project needed improved management. That has taken place. We are very positive about the consortium. It is a five-laboratory consortium.

The actual construction is underway in my district in east Tennessee, and I have been there and seen the massive scope of it. As a matter of fact, I would encourage the Subcommittee, since this is the largest single project under construction through the Office of Science at the Department of Energy right now in the country, to come and see it.

As a matter of fact, I asked Jeanne Wilson, Mr. Chairman, if they were saving that space right there on the wall for the Spallation Neutron Source when we had a prototype model of it, and she said, ``Not unless your name is Chairman Callahan.'' [Laughter.]

Actually, the Spallation Neutron Source will be probably pretty old before it makes its way to that wall. But anyway, I will just persevere.

I would ask, there have been a few changes since you last appeared and talked to us about the Spallation Neutron Source. I just want to ask about the team and the consortium and how that is coming, and then about the fact that there are fewer scientific instruments now needed in the actual project, and how that has affected the progress that we are making as we seek to build this very important neutron facility for our country. Dr. Decker?

Dr. Decker. Thank you. As I indicated, we are very pleased with the fact that the project is on cost and schedule. The management team is doing a good job. We had a significant change in the management at the top of the project. Dr. Moncton, who was the head of the project, decided to return to the Argonne National Laboratory, and Tom Mason has replaced him. Tom, quite experienced, was already involved in the project. His piece of the project, which was the targets and instrumentation, was doing very well, and he has stepped up and he is doing a terrific job.

As far as the consortium that you referenced of the laboratories building this project, each piece of this project is now in good shape, as I understand. Each of the partners is pulling their weight. So we are very pleased that that all seems to be working well.

You mentioned the instruments. When the project was first conceived, the instruments that were envisioned at that time were of the type that were sort of in use at that point in time. New instruments have evolved since, and so we have chosen to build more advanced instruments and probably can afford fewer of them than was originally conceived.

But the scientific throughput from those new instruments will certainly be equal to or better than from the original instruments that we had planned for. So the instruments I think are coming along very well, but we are on a slightly different course than originally planned.

MOUSE HOUSE

Mr. Wamp. Let me switch gears, Dr. Decker, switch gears over to the Comparative and Functional Genomics facility at the Oak Ridge National Laboratory, which is commonly known as the ``Mouse House.'' And we know about the Human Genome Project and the necessary research all across the country that brings that applied technology to the marketplace. There is a lot of interest in it.

We have that facility under construction now, and the total cost is $14 million. I understand that if we did fully fund the rest of the construction in the coming fiscal year, FY 2002, there would actually be a savings as opposed to funding some of that, a very, very small portion of it, in the next fiscal year. Explain why that works and how that works.

Dr. Decker. If I remember correctly, in the present plan there is $1.4 million remaining on the construction project in 2003. If that money were available in 2002, it probably would allow completion of the facility a few months earlier. I do not know the exact figures, but yes, it probably would have some payoff.

NANOSCIENCE

Mr. Wamp. One final question. On nanoscience, explain how the nanoscience research through the Office of Science at the Department of Energy would differ from what happens at the National Science Foundation, and why there would be a need for both.

Dr. Decker. I think this started out as a multiagency initiative. Each agency brings certain strengths to a program like this. Each agency has a slightly different focus.

I mean, our focus in the Department of Energy comes from our mission associated with energy and environment, etcetera, and so our focus in the nanoscience and technology area is on those things that are of benefit to the department's mission. So that is somewhat different than the focus, of course, of the National Science Foundation. Their focus is science for the sake of knowledge and science, and not related to a particular mission.

Mr. Wamp. Mr. Chairman, I want to point out that Kevin Cook has been to Oak Ridge already and observed all these major investments that the Federal Government is making. I appreciate his leadership from a staff perspective. And I yield back the balance of my time.

Mr. Callahan. And the Chairman is going to visit the Oak Ridge facilities in the near future, too.

Mrs. Roybal-Allard?

Mrs. Roybal-Allard. Thank you, Mr. Chairman.

Dr. Decker, as I was reading through all this, the information, one of the things that caught my attention was your testimony about the science at the nanoscale. And I understand that Lawrence Berkeley Lab in California is going to play a very important role in that research.

Your testimony mentions the benefits of nanoscale research in DOE's missions in science, energy, defense, and the environment. Could you describe for me in just a bit more detail the work that is contemplated in this field, and what your research priorities are, and how it is reflected in your budget? Because I could not find it specifically in the budget.

Dr. Decker. Yes, thank you. First of all, this is a very exciting area of science. The science of materials at the nanoscale, from 1 to 100 nanometers in dimensions, is very, very different than the science of materials, the properties of materials that one finds in bulk. And the focus of our program really is trying to understand the very different physical effects that occur, chemical effects that occur on this very small scale, which is really about a thousandth to a ten thousandth of the diameter of a human hair. We are really talking about things at a very, very small scale.

A laboratory like Berkeley, that you mentioned, has some very, very good capabilities through past investments to significantly contribute to research in this area. It has facilities such as the synchrotron light source there. It has electron microscope facilities which are going to be very, very important to characterize these nanostructures, these materials, at this very small scale.

There are some very interesting results that have already come out of this. For example, it has been discovered you can add nanocrystals of aluminum oxide to aluminum and get a surface hardening which is equal to the best steel bearing material. It is a remarkable change in the properties from aluminum, just through that addition of nanocrystals.

Mrs. Roybal-Allard. I guess what I am trying to focus on and trying to understand a little bit better is how does this relate to people, you know, in everyday terms, to my constituents? And I just happen to have this ``Molecular Foundry: Crucible for the Nanoage,'' and it talks here something about bioelectronic implants. Could you kind of put it in the context, for example, of maybe health, in the health field, how this would help people in the health field?

Dr. Decker. We are not really focused in the Department of Energy so much on the health applications of nanoscience. Some of the other agencies are more focused on that. But let me give you an example. I did give you one example in the materials area where one would have a very lightweight material with very hard surface properties, which will certainly be of use perhaps in vehicles and other things.

Certainly other areas that we envision nanoscience will have impact are in the conversion of sunlight to electrical energy. There are ways in which nanolayered materials can be made to have much higher efficiencies. Another area which is almost kind of the reverse is the use of nanolayered materials to produce light from electricity at lower power levels. So I think certainly one can see down the road some significant impacts in the energy efficiency area.

Mrs. Roybal-Allard. And going back to my original question, where is that reflected in your budget? I could not find it under ``nanoscience,'' and I was just wondering if it was under a different heading in terms of them money for the support of this research.

Dr. Decker. And I am not sure where all that was described. I just do not have the document in my head.

Mrs. Roybal-Allard. Okay. If you could get that information to me later?

Dr. Decker. Sure. I will be glad to.

[The information follows:]

Nanoscience Budget

The request for nanoscience is contained in the ``Science'' section of the DOE budget, Volume 4, in the Basic Energy Sciences program. Except for the data sheet on Project engineeringand Design (PED), various locations (project number 02-SC-002 on page 533), the research funding is budgeted within the materials, chemical, and engineering activities. Since there is no increase for nanoscale research from FY 2001 to FY 2002, the only increase is described in the PED data sheet.

Mrs. Roybal-Allard. It is my understanding that you have a wide variety of research underway at Lawrence Berkeley and Lawrence Livermore National Laboratories, such as advanced computational scientific research, basic energy sciences, fusion energy, and high-energy physics. As a new member of this committee, it has been difficult for me to sort out all these various missions.

For example, you have an increase for biological environmental research at Lawrence Livermore, and a significant cut in the same account at Lawrence Berkeley. Could you explain to me your funding request in this area?

Dr. Decker. I would have to supply the rationale for that particular cut for the record. I am not sure what it is. I am not sure what affected that.

[The information follows:]

Biological and Environmental Research Program

The Biological and Environmental Research program conducts a broad range of fundamental research at Lawrence Berkeley and Lawrence Livermore National Laboratories, including human and microbial genomics, global climate change, and environmental remediation. Both laboratories play essential roles in the program's Joint Genome Institute, which helped sequence the Human genome.

At Lawrence Livermore the research on DNA sequencing of microbes that sequester carbon is increasing. Furthermore, the Laboratory's responsibilities at the Joint Genome are increasing.

At Lawrence Berkeley the program is completing several projects and others are up for renewal, re-competition, and peer review. For example, the DNA Repair Protein Complex

Beamline at the Advanced Light Source was a one-time project funded in FY 2001, equipment purchases for genomics have been completed and projected equipment needs for FY 2002 are under review. Research activities in structural genomics, low dose radiation, and global change have been completed. The Laboratory will also have the opportunity for funding in the Genomes to Life program in FY 2002. I anticipate that Lawrence Berkeley will be a strong competitor. The laboratory currently has a large number of proposals pending peer review in a number of program areas including low dose radiation, microbial genome, and the Microbial Cell Project.

Mrs. Roybal-Allard. Now, are these programs, are they integrated with research programs for, for example, nuclear weapons? Are they segregated? Do the science teams overlap? Could that be one of the reasons for the cut?

Dr. Decker. No. Of course, Lawrence Berkeley Laboratory does not do any work on nuclear weapons. That is only at the Lawrence Livermore Laboratory.

Mrs. Roybal-Allard. So then you will get the information, then, as to why you have a cut in one and----

Dr. Decker. Yes. I think the answer is, and again I will supply the correct answer for the record, but I believe that some of the money for a program at Berkeley was set aside because there is going to be a competition for some new work for which they would be one of the competitors. So they have an opportunity to gain that money back, or perhaps additional money.

STANFORD LINEAR ACCELERATOR CENTER

Mrs. Roybal-Allard. I just have one more question dealing with the Stanford Linear Accelerator Center. Could you describe for me a little bit of the work that is accomplished there?

Dr. Decker. There are two facilities at the Stanford Linear Accelerator Center. There is a synchrotron light source which is used for a wide variety of research, from materials to chemistry to work in the life sciences. What that facility does is provide a very intense beam of light which is in the range of wavelengths I think going up into the x-ray region, and it is used to probe materials and learn about their structure.

The other major facility there is the B Factory and the work at the B Factory is in the high-energy physics area. It is designed to look at a particular aspect, a sort of esoteric aspect of the nature of matter and antimatter. It is getting at a problem which in the technical jargon is called C-P violation, but it is tied to this issue of why it is when the universe was formed, where one would expect that there was an equal amount of matter and antimatter produced at that instant, that somehow there was a asymmetry that caused matter to survive more than antimatter. And the universe as we know it today is made up of matter, and we do not find much antimatter.

Mrs. Roybal-Allard. Thank you.

Mr. Chairman, thank you.

Mr. Callahan. Mrs. Emerson?

DEPLOYMENT OF RENEWABLE ENERGY TECHNOLOGIES

Mrs. Emerson. Thanks, Mr. Chairman.

I come from a very rural district, so I think I am going to switch the subject to renewables, and something that I think I might understand a little better as a new member of the Committee, although I am learning very quickly here from my colleague, Mr. Wamp.

I suppose, too, my questions probably should go to you, Dr. Dixon, and particularly because we always have these fights about the issue of renewable energy because of the high cost, and we might have to subsidize certain things such as ethanol, but on the other hand we all know that renewable energy sources are a viable alternative source of energy. But I really want to move these technologies from in the lab to out in the field, and I want an assessment from you of what are we doing in terms of moving toward the deployment or more rapid deployment of those technologies in a more affordable way.

Dr. Dixon. Thank you, Mrs. Emerson. I will be glad to respond to your question. Let me pick two or three examples, and we can explore from there. Let us begin with wind energy. We have a good wind resource in Missouri, being one of the native sons there.

We indeed have seen great strides in the movement of the technology from the laboratory, from the DOE complex, with our private sector partners, into the private sector. We have seen an enormous growth of wind energy in the U.S. and worldwide. Worldwide, we are going to see about 17,000 megawatts installed around the world, with most of the leadership in Europe and here in North America. The amount of wind power in America will double by the end of this calendar year or next calendar year. So the technology is moving out of the labs, the improved designs of the technology. In partnership with the private sector, we have seen great strides in the deployment of wind energy across America.

In the area of solar energy technologies, we have five major manufacturers in American in the photovoltaic industry, and we have seen dramatic growth in their production of photo cells across the U.S., in these five major manufacturers, growth of 20, 30, 40 percent a year. So the R&D investments made by this committee over the past 20 years have made a significant difference in the growth of this industry, because we have worked very closely with the private sector in cost-shared R&D programs to see this rapid growth in the production of PV cells. We are at a point in time now where we are probably not able to supply what we need in the western U.S. because of the electricity crisis.

Another area of great potential would include the opportunities in geothermal or bioenergy, bioenergy in your home State of Missouri. We are seeing an era of time, with the Biomass R&D Act of 2000, where in fact we are seeing the bioenergy industry come together, and there are opportunities to build upon the good work done across the DOE complex, the understanding of the resource, how to handle it and how to convert it to energy. And now we are seeing field tests across America to move this technology, again, out of the labs, into the hands of rural America, and provide a cost-effective resource, a resource which does not damage the environment and is renewable and can be sustained.

INVESTMENT IN RENEWABLE R&D

Mrs. Emerson. Well, then, I am glad to hear all of that, but I am looking at the budget. And I will start with solar because you ended with solar, and obviously the budget is substantially reduced in that particular area. I do not know if it is being made up in a different agency, but if in fact we have made great progress on R&D, I mean, are we ready now for deployment rather than spending the investment, making the investment in R&D? Is that why you have cut the budget so much in that particular area? I am very interested to know.

Dr. Dixon. Well, let us take the solar energy technologies account specifically. Over the last 20 years, this committee has invested over $1 billion in concentrating solar power R&D activities, concentrating solar power to harvesting the sun's energy and providing heat and power to the American people.

That technology has moved from the laboratory, it has moved from field test, and it is now being developed in commercial applications. It is commercially viable here in North America, providing electricity for about 6 cents a kilowatt hour in California, and we are seeing an expansion of the technology in Spain and in Egypt and Morocco.

So it has moved from the laboratory to the marketplace, and therefore our investments in power towers and the dishes associated with this technology, we are ramping down, appropriately so, because we have handed it off to the private sector.

Mrs. Emerson. Okay, so in other words there really isn't that much new type of research that needs to be done. We pretty much have reached the optimum level?

Dr. Dixon. With regard to the concentrating solar power, we call them power towers, yes, that is an area that we have invested in heavily and we have seen some successes.

BIOFUELS

Mrs. Emerson. You know, also in reading your testimony I noticed a lot of reference to ethanol but nothing with regard to soy diesel, for example, and the conversion of soybeans into diesel and other synthetic type of resins. They wouldn't be synthetic, but other resins and coatings, a lot of which have been researched at the University of Missouri-Rolla in my district. And I am quite impressed with the work that they have done, that has not cost a lot of money. And quite frankly, to make a refinery, if you will, for the production of soy diesel is not a very costly effort.

The only thing that does concern me is how the government perceives the concept, or what do you all think of the concept of building these types of refineries, and is there a real future, at least in your mind, of increasing the use of these fuels as a replacement for oil?

Dr. Dixon. Well, yes, we see a bright future for biofuels, and that is why we are asking for $82 million from the committee to continue investments in this area. There are a number of opportunities in the bioenergy arena--biofuels, biopower, bio products--and we think that further investments are needed in this arena. In fact, there need to be investments in the basic chemistry and understanding of these molecules at the laboratories and research programs at University of Missouri and other places. At the same time, there are certain areas that we believe are right for field testing or building prototypes, and we are making investments in those areas.

Mrs. Emerson. But you still cut the budget from last year.

BUDGET AMENDMENT

Dr. Dixon. With the budget amendments of $39 million to the original request, I believe the biomass/biofuels energy systems, our request is almost $82 million. We are almost level-funded, but you are right, there is a slight cut.

DOE-AGRICULTURE COOPERATION ON BIOMASS

Mrs. Emerson. From $86 million to $68 million. Now let me ask you something else. Do you all coordinate on these research projects, particularly with regard to the use of agricultural commodities, with the USDA, for example, in the work that they are doing there, so that everybody complements one another? Or are we having duplicative work done?

Dr. Dixon. Well, under the Biomass R&D Act of 2000, we are directed to work with, in cooperation with the Department of Agriculture and other agencies which have jurisdiction over bioenergy issues. We are neighbors, as you know, right next door. The Department of Energy, Department of Agriculture, work very closely. We have coordinating committees, coordinating councils, technical advisory panels that are all co-managed and coordinated with the Department of Agriculture.

Mrs. Emerson. Okay, so the answer is yes?

Dr. Dixon. Yes.

Mrs. Emerson. At first I wasn't sure if you were going to answer the question yes or no. So I appreciate that, and would also hope that, Mr. Chairman, we can find some way to perhaps ramp up this line item on the budget. Thank you very much.

Mr. Callahan. Mr. Doolittle?

BUDGET AMENDMENT

Mr. Doolittle. Thank you, Mr. Chairman.

I am sorry I missed the testimony at the beginning, and this was probably explained, but I am looking at page 3 on Dr. Dixon's testimony under hydropower, and looking at the first column, the FY 2001 comparable, and then the FY 2002 request. Then it refers to an amendment, and you end up with the last column request for the amendment is the same as the FY 2001 comparable. Is that just a coincidence, or can you explain that to me?

Dr. Dixon. The amendment is finding its way to Congress with the full explanation. We understand it is on its way from OMB to Congress with the full background and data and the history of the amendment.

The hope is to in fact continue to make investments in hydropower research, and to continue to develop fish-friendly turbines, which of course are a very important tool in managing the hydropower sector in the Pacific Northwest, the trade-offs between managing the fisheries, providing adequate electricity in a time of crisis. And developing the next generation of turbines, fish-friendly turbines as we refer to them at the department, is a priority for us.

FISH-FRIENDLY TURBINE

Mr. Doolittle. Well, I am very pleased to hear that that is being increased. Explain to me, what is a fish-friendly turbine? How does that work?

Dr. Dixon. Thank you, Mr. Doolittle. The fish-friendly turbine is a turbine which in fact will not kill or damage the fish as they pass through the hydropower complex. And it turns out that in fact the older generations of turbines, because of the pressures and the turbulence involved with going through the turbine itself, actually stun the fish. It does not actually normally kill them. Most of the time the fish are stunned. As they end up at the bottom of the spillway or in the water, in fact because they are stunned, they are easily eaten by other predators. So we are looking to in fact develop turbines which result in fish passing through the hydropower complex, in which the fish are not stunned and not killed.

Mr. Doolittle. Have you to date had some reason to believe that this is relatively easy to accomplish?

Dr. Dixon. The investments in the fish-friendly turbines have been taken over the past 5 or 10 years. Development of a turbine has made good progress. The delicate part, frankly, is the installation of the turbines in field tests and then to actually test them using very solid scientific criteria.

We have actually developed what we affectionately call the ``crash dummy fish'' that will actually go through the fish turbines. We are able to measure the pressures, the turbulence, the impacts on the anatomy, the physiology of the fish, and to do this in a rigorous way requires thorough testing and thorough documentation. We have developed this technology, and field testing is underway.

Mr. Doolittle. So would it be your plan to actually replace the turbine at one of the dams with one of these, to test it out? I mean, is that part of the program.

Dr. Dixon. It is eventually part of the program. This activity is co-managed and coordinated with those other Federal agencies which have jurisdiction over hydropower projects, both in the Pacific Northwest as well as the Southeastern U.S.

DISTRIBUTED ENERGY RESOURCES

Mr. Doolittle. You used a term in here, I am trying to find it, something about distributed energy resources, I think. Anyway, my question, I do not know if I have used the right term, but I wondered what that was. Here it is. Distributed power generation, I guess. What is that?

Dr. Dixon. Mr. Doolittle, it is a term that refers to generation of power on site, whether it is power generation to support an individual home or a building or a campus. And as we have seen problems with the overall electricity grid across

America, we are looking for ways to provide highly reliable power, provide it on site, high quality power, without causing any environmental damage, and doing it efficiently, we are developing a new portfolio of technologies called distributed energy resources.

The current electricity grid in America is many, many decades old. The transformers, the transmission and distribution lines, the circuit breakers, in my earlier testimony I believe over 75 percent are over 25 years old. So we are looking to upgrade and improve this infrastructure, and one of the most efficient ways of doing so, both technologically as well as economically, is to bring power generation closer to the consumer.

And we work with microturbines, with fuel cells, reciprocating engines, and smart controls. Using some of Dr. Decker's nanotechnologies, we are able to develop smart control systems to make all these pieces, both the power generation as well as the energy efficiency technologies that we have, all work together and all talk together in smart systems for the future.

FUEL CELL TECHNOLOGY

Mr. Doolittle. I read in, I think it was in Popular Science, an article that said that within 10 years new construction would include fuel cells in homes. Do you agree with that?

Dr. Dixon. Fuel cell technology is promising, and this Committee and the department have made significant investments in fuel cell technology. In prior testimony this morning I referred to the fact that the Coleman manufacturing people that developed the Coleman lanterns are now developing fuel cells that will be on the market this year for use in camping.

So there are small prototypes moving to the marketplace. There are opportunities, and in fact we are involved in field testing in several locations across American for commercial applications, and eventually we think this technology will be available for use in homes. As I told the Chairman earlier today, I am cautiously optimistic that we will be moving forward. It is always a trade-off between the health, safety, and the costs, and we are working all of these problems simultaneously to bring highly reliable power to the American people.

Mr. Doolittle. And is it natural gas that is the fuel for fuel cells?

Dr. Dixon. There are a number of opportunities, a number of fuel types that can be used for fuel cells, but natural gas is one that is in favor right now. But we have a whole range of R&D activities to provide fuel types. One great thing about fuel cells, bioenergy and other sources, hydrogen, natural gas, can be used to power fuel cells, so many great opportunities.

Mr. Doolittle. Thank you.

Mr. Callahan. The purpose of that stunning of the fish program, we are too humane a body not to be concerned about that. We do not want these fish stunned when they go downstream and they bite into a barbed wire hook. [Laughter.]

And then you nearly jerk their head off, pull them up on the beach, and then cut their head off while they are still kicking. We want them to have full use of their faculties. [Laughter.]

NUCLEAR ENERGY PROGRAMS

Mr. Callahan. Mr. Visclosky?

Mr. Visclosky. Thank you, Mr. Chairman.

I would like to cover two areas. If I could back up on the Fast-Flux reactor and isotopes for a second, Mr. Magwood, if I could ask, in looking at the testimony, you have a number of programs going at various universities, including the University of Michigan, on isotopes. I am wondering, as people are studying about what to do with the Fast-Flux, and you mentioned the increased demand for isotopes, and the universities apparently would suggest they need additional funds and resources. Is there a marriage to be made here as far as production of isotopes and the use of some of these facilities at universities, instead of Fast-Flux?

Mr. Magwood. What we have basically done over the last several years, Mr. Visclosky, is two things. First, the Department of Energy has moved out of areas of isotope production that can be done by either the private sector or by universities. For example, we rely very heavily on the University of Missouri in Mrs. Emerson's district to produce many isotopes for both commercial and experimental purposes. But there are some isotopes that universities simply cannot make. They simply do not have the infrastructure.

What FFTF had been proposed to be used for was the production of large-scale amounts of commercial isotopes that would be used in hospitals for routine treatments of cancer across the country. So it is really the quantity of isotopes that is of interest, a large quantity of isotopes that would be produced in FFTF.

That is not something universities would want to spend significant resources getting into. Very few of the university reactors are large enough to produce large amounts of isotopes. But the exception, as I mentioned, is the University of Missouri where they do produce a large quantity of isotopes, but even that reactor is much, much smaller than FFTF, and therefore wouldn't be in that business.

What we had looked at during the time the FFTF was being evaluated last year, was the possibility of partnering with the private sector, to have private sector companies use FFTF, simply stated, as a radiation vehicle, so that DOE would not be producing isotopes. Rather, it would be these companies, and they would use our facility. We are not planning to get into the large-scale isotope business.

NANOSCIENCE REGIONAL CENTERS

Mr. Visclosky. There has been some discussion about nanoscience today, and my understanding is, you have $4 million in the budget, Dr. Decker, for nanoscience this year?

Dr. Decker. Our total request for nanoscience is $87 million.

Mr. Visclosky. Okay, so the $4 million would just be for the engineering and design for the research centers?

Dr. Decker. That is correct.

Mr. Visclosky. Okay. There are four that are proposed. How were the decisions made as to those proposed sites? Was that competitive?

Dr. Decker. Yes, it was. It is competitive among the DOE laboratories that have facilities that are already in place and important for nanoscience research. The idea here is that----

Mr. Visclosky. If I could interrupt you for a second, as I understand, one of these would--I am shocked to see this--would be in New Mexico, and the University of New Mexico would be involved as a partner with that lab. These would all be partnerships with labs?

Dr. Decker. Yes.

Mr. Visclosky. And where would the other three be, and who are the other universities?

Dr. Decker. I do not recall the universities that are involved. Lawrence Berkeley Laboratory, Oak Ridge National Laboratory. Let us see. The other proposals were from Argonne and Brookhaven, I believe.

Mr. Visclosky. And so then Livermore, for example, would compete their partnership with universities?

Dr. Decker. Livermore is not proposed to build such a center, to have such a center. Lawrence Berkeley laboratory has.

Mr. Visclosky. I am sorry. Lawrence Berkeley, then.

Dr. Decker. Yes.

Mr. Visclosky. Would they then have competed that center for a university connection, or is the university relationship necessary?

Dr. Decker. I do not know how they went about forming their partnerships. I can find that out for you. I do not believe that they ran a competition. I think this probably was done through conversations with local universities, envisioned to be kind of regional centers.

Mr. Visclosky. Would anybody here on your staffs be able to help provide you with the information now as to which universities are involved?

Dr. Decker. No.

Mr. Visclosky. But there was not a competition, then, as far as university involvement?

Dr. Decker. No, I do not believe so. I believe, as I said, these are being done as regional centers, and----

Mr. Visclosky. So you would not assume I was wrong in believing that you would have a relationship for one center between Los Alamos and the University of New Mexico?

Dr. Decker. No. I am sure you are correct about that.

Mr. Visclosky. Is there going to be a fifth center, as well, potentially?

Dr. Decker. I think that depends on the proposals and how they peer review.

Mr. Visclosky. And do you know, if that would proceed, whether there would be any competition to allow universities to participate on a competitive basis?

Dr. Decker. The philosophy in putting these together is to really build on capabilities that already exist at some of the national laboratories. We have significant investments in large facilities that are going to be needed to characterize these nanostructures and materials, things like the big synchrotron light sources, neutron sources. We have got investments in sort of one-of-a-kind instrumentation like very powerful electron microscopes.

Mr. Visclosky. Excuse me. In the DOD budget--I am a member of the Defense Subcommittee, as well--it is certainly my impression we have done expenditures for nanoscience. You also obviously have, I guess, facilities being established by the National Science Foundation, as well. Are we running the risk here of some duplication?

Dr. Decker. No. This has all been worked out in an interagency working group, and----

Mr. Visclosky. And DOD has been involved in that?

Dr. Decker. DOD has been involved with that, along with the National Science Foundation, and there was a need identified for these particular types of centers that would be used by a lot of researchers who are funded by other agencies.

Mr. Visclosky. Are the costs for several of these centers now going to exceed $100 million?

Dr. Decker. I do not have cost estimates. I think that they are in the range of $70 to $80 million. That is what I have been told.

Mr. Visclosky. If you could, for the record, provide the latest cost estimates for each of those centers, and also specify the centers involved, the relationship with the universities, and how that relationship was established.

And I might just say that my concern as a Member, and I have a number of institutions of higher learning in my district, is how these selections are made. My sense after 17 years in the Congress is, the rich get richer, and people such as those on the panel here are criticized for earmarking to help others try to at least play in the game, and it is not a game as far as I am concerned.

I do think we have a responsibility, whether that university is in Alabama, Tennessee, Texas, Indiana, or New Mexico, or in the district of a Member who doesn't happen to sit on this panel, that they have a fair obligation to compete, to take some of the pressure off of us that we have to reach out and earmark to give people a chance here. I am not happy to hear that for the universities here, the partnerships were not competitively made. I am not happy about that.

[The information follows:]

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Mr. Callahan. You do not imagine somehow the Senate had a role in that, do you?

Mr. Visclosky. I do, and we all have earmarked, and I am not ashamed of that. But I also think this idea that people, you know, there is some competitive process out there and it just happens to go to the same university--and these are great institutions. I am not knocking any of them. I couldn't get into a lot of them. I got rejection letters from a lot of them, including Michigan. Michigan turned me down.

But I think every time you do one of these and it is not competitive, that is hurtful to higher education. And more so the reason, then, Mr. Magwood, I appreciate some of the competitive partnerships--not competitive, but partnerships you are doing with minority universities.

Mr. Callahan. Do you have any more questions, Mr. Wamp?

Mr. Wamp. No, thank you, Mr. Chairman.

Mr. Callahan. Mr. Edwards?

Mr. Edwards. Thank you, Mr. Chairman, and I will try to be cognizant of the time.

NUCLEAR ENERGY PROGRAMS

Mr. Magwood, obviously you are a real believer in the role of nuclear energy power. I believe there are 103 U.S. plants that provide 23 percent of electrical power in our country, and many of those licenses are up.

Let me ask you this specifically: What would be the impact to bright students in our colleges, universities, thinking about pursuing Ph.D's in nuclear engineering, nuclear sciences, when they wake up and we find out we have cut the nuclear energy plant optimization budget by 9.8 percent; the Nuclear Energy Research Initiative, a lot of that going to our universities, by 48.1 percent; and nuclear energy technologies research by 39.9 percent?

Mr. Magwood. Clearly it is not what they would hope to have seen. There is no question----

Mr. Edwards. Is it what you would have hoped to have seen?

Mr. Magwood. I am always happy with what I can get.

Mr. Edwards. You have all done such a good job, and I honestly admire and respect you for this, putting on a good face and presenting the best case you can. That is your responsibility. I do not criticize any of you for that. But you are doing such a good job, you might help talk your agencies into a massive cut in programs that you care deeply about.

I want to ask you, I was not going to ask this question but I think I will now, did OMB send a directive to the Department of Energy to reduce funding in renewable energy research programs, including nuclear power research? Yes or no.

Mr. Magwood. I think the answer, in the case of nuclear, is no.

Mr. Edwards. So you volunteered, without any direction from OMB, you volunteered to make a 9.8 percent cut in nuclear energy plant optimization programs at a time 103 plants, many of the 103 plants are up for license renewal? You proposed the Nuclear Energy Research Initiative be cut by 48 percent, and nuclear energy technologies be cut by 39.9 percent?

Mr. Magwood. The way the budget process works in the Department, Mr. Edwards, largely is a cascade of target allocations. The Department is given so much money to work with, and the Office of Nuclear Energy is given so much money to work with as well. When you must make sure that your facilities are safely operated, that your facilities are operated in a way that does not impact the environment, you try to avoid breaking promises such as cutting scholarships or fellowships for students, and maintain the work that you currently have going, it limits your ability to launch new activities.

Mr. Edwards. When you cut the Nuclear Energy Research Initiative by 48 percent, the energy technologies program by basically 40 percent, how many layoffs will you have to make at the Department of Energy to meet those budget----

Mr. Magwood. We are not expecting layoffs, because we are not starting new activities. We are completing some existing activities, and we have enough money to continue some activities next year as well. We are not starting new activities.

Mr. Edwards. Let me ask the question, and I will finish with this. Maybe this is a more comfortable way for you to answer it. This is the way we did it on defense testimony for the last eight years. Would you send to this committee how you would spend the money under your jurisdiction if those programs were level-funded, those three programs: energy plan optimization, the research initiative, and then nuclear energy technologies, how you would spend the money if you were level-funded. Maybe that is a little more comfortable way to ask you, to make the point and ask you that question. Could you do that?

Mr. Magwood. We could do that.

[The information follows:]

Level Funding Research Programs

With level funding for the Nuclear Energy Research Initiative (NERI) program in FY 2002, we would continue the 23 research projects initiated in FY 2000 and FY 2001, and award up to 16 new NERI projects, 3 new International-NERI projects, and 3 follow-on projects to advance promising research conducted during the first three years of the NERI program. Level funding for the Nuclear Energy Plant Optimization program in FY 2002 would enable us, in cooperation with industry, to continue our efforts at addressing plant aging issues and improving the performance of existing nuclear power plants in the United States. With level funding for the Nuclear Energy Technologies program in FY 2002, we would complete the Generation IV Technology Roadmap and initiate critical research and demonstration activities to address the regulatory, technical, and institutional issues which currently impede the near-term deployment of new nuclear power plants in the United States.

PROGRAM IMPACTS

Mr. Edwards. Thank you.

Thank you, Mr. Chairman.

Mr. Callahan. Mr. Magwood, that response you just gave Mr. Edwards is not a good response, and you ought to practice that a little bit. What you are telling the Committee is that you say you can live with a 48 percent reduction in the monies that we give to you, but you are going to keep all of your employees, that you are not going to cut back on one employee in your Department. And to me that sounds like while you are saying you do not have money for universities because of the cutbacks, and you do not have money to expand the nuclear energy research, yet you are not going to cut back on any of your employees, that you are going to maintain the same level of employees?

Mr. Magwood. I may have misunderstood the question. I was referring to not laying off people that are working on various research activities throughout the DOE complex and also in industry who are working with us.

Mr. Callahan. Well, how many employees approximately do you have under your jurisdiction now?

Mr. Magwood. We have actually been contracted. We are down to about 100 right now.

Mr. Callahan. And how many do you anticipate you will be down to after this 48 percent reduction?

Mr. Magwood. We originally had expected to hire. Because we are actually vastly understaffed right now, we expected to hire about 20 new people this year. We are probably going to really reduce that and just hire a very small number of new staff.

Mr. Callahan. So you are asking for a reduction in your capabilities to expand research at universities and to expand research into nuclear energy possibilities, and yet you are going to increase your staff?

Mr. Magwood. The staff that I expect to hire will be staff that would largely be responsible for operating some of our nuclear facilities. For example, our office operates Dr. Decker's large research reactor at Oak Ridge, and we are responsible for other facilities, so we have to have highly trained people to keep those responsibilities moving, and that has not been affected by any of the budget reductions. I obviously will not hire as quickly, or maybe not at all, in some of the research and development areas.

Mr. Callahan. Dr. Decker, how many employees do you have in your department?

Dr. Decker. I think, Mr. Chairman, in headquarters we have got on the order of 260, 270. I do not know the exact number.

Mr. Callahan. And even though you only requested a $5 million reduction, how many employees do you anticipate increasing or adding to your current level?

Dr. Decker. I think we are pretty much constant in terms of our employment.

Mr. Callahan. But none will have to be laid off?

Dr. Decker. It is pretty constant.

Mr. Callahan. None of them will have to be laid off, though, as a result of this budget request?

Dr. Decker. No, sir.

Mr. Callahan. Dr. Dixon?

Dr. Dixon. Thank you, Mr. Chairman. There are 81 employees under my direct supervision, and based on this request for appropriations, it is my understanding there will be no employees laid off. I share Mr. Magwood's view that we have been understaffed, and we are looking to shift employees to other priorities, the bioenergy program, the distributed energy resources program, the hydrogen activity, and the high temperatures superconductivity, so I do not anticipate any layoffs of DOE employees.

Mr. Callahan. If you all were in the private sector, this would sound so absolutely ridiculous to your board or to your stockholders, that you are going to have a reduced level of funding or your income is going to be 48 percent less and your employees are going to be increased.

RENEWABLE ENERGY BUDGET REQUEST

In your particular case, I would like to just run over this. I do not know how we are going to handle this request. We keep hearing these rumors of this supplemental which is expected to be submitted by the Administration in the next several weeks, which increases your funding request from $237 to $276 in total. That is still nearly $100 million under last year. Is that correct?

Dr. Dixon. I believe it is approximately $100 million off last year, yes.

Mr. Callahan. So you are saying that we gave you $100 million too much for this fiscal year, or how are you going to fill in that $100 million void?

Dr. Dixon. Well, the President has made a commitment to moderate discretionary spending, and we were able to identify a number of priorities, again, in bioenergy, distributed energy resources, hydrogen, high temperature superconductivity, and we will continue to make investment in those priority areas.

When the Secretary rolled out the budget a few weeks ago, he stated in his address to the country that in fact the priorities of the Vice President's energy task force would be revealed soon. We know that will happen next week, and that these programs were positioned to be launched based upon the priorities identified by the task force.

Mr. Callahan. The hydrogen research increase request that we understand may or may not be coming, if it does come, how did they get any information? What made them decide to increase hydrogen research back up to $26 million? What prompted OMB? Did you go over there and tell them? Why?

Dr. Dixon. I did not go to OMB to have any discussions regarding this matter.

Mr. Callahan. Well, why? Did they just all of a sudden just look through the whole budget and said, ``Hydrogen research, we shorted them,'' they did that on their own?

BUDGET AMENDMENTS

Dr. Dixon. There is a $39 million supplemental request which is finding its way to Congress. I understand it is on the verge of being sent to Congress by OMB. There were actually five areas that were identified as priorities. Hydrogen was one of those five.

Mr. Callahan. Well, I am glad that they did, and I will welcome the supplemental request. I still do not know. I mean, we passed the budget this week, and we passed it with very defined lines of spending levels in order to have an ability to reduce taxes for the American people, and I am going to go through the Sunday morning spiel: We want to save Social Security, we want to protect Medicare, we want to do all of those things. We have maximum levels of spending.

I do not think they are sending up a supplemental request just for your department. I imagine that they are going to be sending up a supplemental request to take in a lot of areas. And if that is the case, they are going to have to take that $39 million from someone else. Do you have any idea where they are taking it from? Are they taking it from Dr. Decker?

Dr. Dixon. The reallocations within the Office of Energy Efficiency and Renewable Energy all were within the accounts that have jurisdiction.

Mr. Callahan. So you do not know where they got the $39 million? They just decided to reshuffle something else, somewhere else?

Dr. Dixon. The $39 million was identified in the Partnership for a New Generation of Vehicles account, which is in the Interior and Related Agencies Appropriations.

Mr. Callahan. Well, in any event, you can go back to your respective groups and tell them that the Chairman said you did a good job of presenting your case, and that the bad news is that the Chairman said he probably was not going to adhere to your request to cut your ability to have an effective agency in half, and that we are probably going to ignore that part of your request and to give you what we feel is an ample amount of money to have the universities participate in further research, to make absolutely certain in nuclear research that we are prepared for the inevitable, and that is the expansion of our nuclear power plants, and the same with science.

But we appreciate your professionalism and your in-depth knowledge of your respective agencies or departments, and thank you for coming before our Committee.

Dr. Dixon. Thank you, Mr. Chairman.

[The questions and answers for the record follows:]

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